THE TIMES
Higher Education
SUPPLEMENT

Lecturers' disputes solved

by David Jobbins

Solutions to two long-running disputes between college lecturers and their local authority employers were found this week.

The national joint council on conditions of service found a way out of the deadlock over the status of the 1973/75 agreement on redundancy procedures between the Committee of Local Education Authorities and the National Association of Teachers in Further and Higher Education.

Under the formula reached this week, the agreement will remain in force unaltered where it has been adopted, and will continue to be available as an appendix to the new codified document which draws together all other collective agreements predating the NJC.

The deal was secured with a commitment to negotiations "as early as possible" on a new and comprehensive redundancy agreement—something Natfhe has been seeking.

But there were indications that the negotiations would be tough. The management side warned firmly that nothing in the existing recommendations—especially one year's notice of redundancy—has a right to survive in the new agreement. Talks are expected to get under way fairly soon.

The NJC also finally agreed how to implement last year's Clegg recommendation that research staff in the public sector should have their salary and conditions negotiated nationally alongside their lecturer colleagues.

The present patchwork of different methods of negotiating pay was incompatible with good industrial relations, the commission said. The deal incorporates a way of relating research staff to Burnham scales and, on the likely assumption that it is formally ratified by the Natfhe executive today, is backdated to September.

"In stringent financial circumstances it is something to have got a national framework", Natfhe's negotiating secretary, Mr Derek Weitzel, said. "We hope subsequent settlements will be more generous for these people to bring them more in line with their university counterparts."

About one third of public sector research staff are in London and the south east, where their pay is tied to education authority officials' scales. The likely effect is difficult to judge but almost all newly appointed research assistants will now start at least one point up the incremental scale, according to Natfhe.

Team to monitor chemical engineering meetings

A three-man monitoring committee is to sit in all departmental meetings of the chemical engineering department of Sheffield University for the next three years.

Inquiries by the *THES* have confirmed that the work of the department was the subject of a highly confidential report submitted to a meeting of the university senate last month.

Unease at the amount of time some department members were spending on their commitments in contracts to industry and other outside bodies, was first voiced inside the engineering faculty.

But it is understood matters came to a head after fresh doubts about the teaching inside the department were first expressed by a visiting team from the Institute of Chemical Engineers.

The ICE team visited Sheffield as part of a general review of chemical engineering courses started in 1978. Accreditation on the basis of academic studies and design project work lasts for four years and is usually considered a formality for universities.

Although accreditation for the field has not been withdrawn, criticism was sufficient for the university to commission an internal report to be put before senate.

The matter has been shrouded in secrecy, and all senate members were asked not to discuss the report outside senate. It is understood that the report itself was typed only by the university.

The university has declined invitations to discuss the matter.

Poster starts a row in Scotland

A furious row has broken out over the production of a campaign poster by Scottish Conservative students described as offensive, illegal, and "aping the worst excesses of sex-pistolsing movie advertisers".

The National Union of Students is taking legal advice on the poster which appears as part of anti-NUS and pro-Government campaigns being waged by the Federation of Conservative Students (FCS).

The poster, headed "Support the Cuts", depicts a pair of hands holding a woman's breasts while another male hand uses a pair of scissors to cut the woman's bra strap.

An internal FCS newsletter reveals that the "now infamous" poster is aimed at both Marxists and feminists—and does not indicate who printed or published it "in case your union has policy against sexist propaganda".

In fact in law all printed material must reveal the printer and publisher. A leading article in the NUS paper, *National Student*, to be published next week, describes the poster as illegal, part of a "campaign of lies".

Another FCS poster attacking the NUS.

YOP improvement plans 'completed by April'

by Patricia Santinelli

Plans to improve the quality of the Youth Opportunities Programme and transform it into a long term education and training scheme will be completed by April and become operational by the autumn, according to a confidential document discussed by the Manpower Service Commission this week.

This marks the first step towards achieving proposals made by Mr Jim Prior, secretary of state for employment, last year. He asked the commission to develop the programme so that it could eventually offer training to all young people, with as a priority the provision of education and training to all 16 and 17-year-olds not in education or employment up until the age of 18.

The commission's decision to go ahead—it has been a long held ambition since the inception of YOP to offer a permanent planned programme of training and work experience linked to further education—comes at a time when forecast figures for youth unemployment are particularly bleak. Predictions are that by the beginning of 1982 there will be nearly 300,000 unemployed teenagers, without taking account of YOP and other special measures that bring the figures nearer 600,000. This is set against a total unemployment figure of two and a half million unemployed excluding school leavers, by the middle of 1981.

The commission's plans are to ensure that no YOP entrants leave the programme after a year or more without having been given education and training which maximises their employment opportunities. Every trainee is to be equipped with a set of basic skills, knowledge and experience common to most jobs such as planning and problem solving as well as with job specific training. The latter is to be centred on transferable skills which can be used across a range of industries. A framework for this might include clusters or groups of occupations ranging from administration, agriculture, food preparation and health and welfare, each of which would be supported by an "individual" curriculum.

It warns however that the development is no simple matter. "There is no magic formula. What is required is a steady, adroit use of a number of different fronts." It has been achieved in the past and a half years, but this should result in very significant progress in the next 15 years.

Much of this plan is to be achieved through consultation with the cooperation of the education sector, careers services, employers and trade unions as key training bodies. Under the commission plans to record YOP certificate and develop into a real "passport to employment" which outlines young people's achievements and experience on programme.

Delay for cost cuts at London University

by Robin McKie
Science Correspondent

There are to be more delays over the introduction of possible cuts in medical education costs at London University.

The working party on medical costs, which was expected to report this month, is now to be re-constituted and its report delayed by a further month. This re-organisation is being carried out to allow increased clinical school representation and decrease the pre-clinical representation on the party.

The group has already investigated cost-cutting measures for pre-clinical schools and the decision to prune clinical school funding follows a recent letter to the party from the university's joint planning committee. This suggested that not only closures of pre-clinical schools be looked out, but that the working party "might consider as options the complete closure of the following medical schools—the Royal Free, St Thomas's, St Mary's, St Bartholomew's, Westminster, Middlesex and Charing Cross".

The university's Senate will not decide on the issue until April now, adding further delays to issues raised in the report of Lord Flower's committee on medical education cuts which was presented a year ago. Successive amendments to this report were made by university committees until the altered report was finally rejected by Senate in October.

The working party on medical costs was set up by Senate instead and is to prepare a series of cost-cutting options—which will be examined and acted upon by the joint planning committee and the Senate.

However, the party is unlikely to present the JPC with a set of clear-cut options. For one thing, it has found there will be little point in closing relatively cheaply run schools, such as St Bartholomew's and Guy's, and moving students to more expensive schools such as the Royal Free, the Charing Cross, and St George's. Yet these more expensive schools are the newer ones and it is politically unlikely they will be closed.

British Council merger

A merger between the British Council and the Inter-University Council for Higher Education Overseas is expected to be announced next month.

Vice-chancellors met last week to settle the fate of the IUC and its chairman, Dr Alan Russell, who had offered his resignation, in order to break the deadlock over the merger.

Neither side has made any statement on the outcome of the meeting since it is understood that an announcement is to be made in Parliament early next month. But callers for Dr Russell this week were told that he had left the IUC.

Broad agreement had already been reached on the shape of a new unit within the British Council, expanded to include the polytechnics and its Scottish central institutions. Guarantees had been given for its independence and continuing present operating methods, and the range of countries in which the IUC operates was to be expanded.

The sticking point was the position of Dr Russell, who does not fulfil the criterion laid down by the British Council for the head of the new unit, that he should have had experience in polytechnic education. The chairmanship was the only requirement, but may have been persuaded to resign at a special meeting with the director-general of the British Council, Mr John Burgh, last month.

The departure of Dr Russell should clear the way for the merger to go through as planned at the end of March. It will complete the review of British academic and technical links, the Lyne-Plumley White Paper on overseas.

'Overseas' ruling

Six national organisations involved in education or race relations have written to Mr Mark Carlisle, Secretary of State for Education, calling for the abolition of rule which classifies students as "overseas" for the first three years of residence in Britain. The bodies involved are the Commission for Racial Equality, the National Union of Students, the National Association of Teachers in Further and Higher Education, the National Association for Multi-Racial Education, the Joint Council for the Welfare of Immigrants, and the National Association for Teaching English as a Second Language.

Science budget allocations

The distribution of the science budget for 1981-82, which will total £343.4m, was announced this week in the House of Commons by the Secretary of State for Education and Science, Mr Mark Carlisle.

The allocations will be:

Agriculture Research Council:	£30.6m
Medical Research Council:	£72.1m
Natural Environment Research Council:	£120.4m
Science Research Council:	£118.4m
Social Science Research Council:	£2.15m
British Museum (Natural History):	£9.2m
Royal Society:	£5.6m

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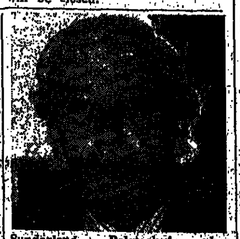

Sunderland Polytechnic has appointed as insider as their new rector. Dr Peter Hart (above) who has been deputy rector since the polytechnic was formed in 1969, is to become the new rector.

Dr Hart will take over his post this month from Dr Ernest Frederick, who has moved west to become the new director of Trent Polytechnic.

Dr Hart, a chemist by training, was first appointed head of the chemistry and biology department at the former Sunderland Technical College in 1958, becoming vice-principal in 1963.

When the college was merged to form the new polytechnic Dr Hart was appointed deputy rector. He has played an active role in the affairs of the Royal Society of Chemistry, becoming vice-president of the

Glasgow cuts

from page one

It has said that the situation is worse than even the lowest theoretical figure for future cuts put to the universities for the last year.

The UGC will give guidance on home student numbers and the broad distribution and the population in 1983-84 is expected to be at the same level as now, which will require reductions.

At Lancaster University discussions are still called "academic reorganization," but Professor Philip Reynolds, the vice-chancellor has told staff the university is not "escape further consideration of everything that rationalisation may imply if we are not to have a series of random rundowns, or decisions imposed on us from outside by financial sanctions".

Members of staff should register whether they could regard their interests "possibly affected" by any of retrenching or retrenching at Birmingham has said it has to lose between £2m and £3m and plans are being prepared to consider what changes can be made.

Awards planned

The Government is developing plans to make two annual Royal Awards of about £25,000 each to education institutions in recognition of outstanding work. Products of collaboration with industry will be

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Richard Freeborn on Dostoevsky

Economic policy groups

Frank Kermode on his intellectual formation

Richard Rose on prime ministers and presidents

David Martin on Maurice Cowling

The future of management education

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DES plans revolutionary new body

Local authorities kept in the dark

The Department of Education and Science is planning to establish a national body for polytechnics and colleges which will effectively end local authority control and introduce instead a regime of direct funding of advanced further education.

This plan, which is a more radical departure from past practice than Mr Anthony Crosland's binary policy of 1965 and can really be compared only to the creation of the University Grants Committee in 1919, will be announced as stage two of the DES's response to the recent Select Committee report.

The plan has been devised by Mr Stephen Hall, an assistant secretary at the DES, and approved by ministers. It has already been cleared by the DES and is now going the rounds in Whitehall so that other departments can comment. However, the local authorities and other outside interests have so far been kept in the dark.

There are likely to be three crucial differences between this plan and the national body proposed by the Oakes committee three years ago:

- Local authorities will have only a minority rather than a majority stake in the membership of the new body.
- Money will be distributed directly to colleges and polytechnics, either on the approximate pattern of the University Grants Committee or, more likely, by the DES on the advice of the new body.
- The new body will oversee higher education *institutions* not *courses*. This will mean that only the polytechnics and major colleges of higher education will be covered rather than all institutions offering advanced courses as envisaged by Oakes. The others will be left out in the cold.

Many of the details of the plan have yet to be decided such as whether the body should be an executive or an advisory body, whether its membership should be representational or personal and whether it should have a regional structure. There will be limited scope for consultation on these questions if the department decides to issue a consultative paper later in the year.

However, the main decision, to cut the Gordian knot of local authority control of non-university higher education, has already been taken and seems irrevocable. Legislation to establish the new body will probably be introduced in the autumn.

The DES plan will be vigorously opposed by the local authorities, especially the Association of Metropolitan Authorities. It will argue that the main motives of the Government are to impose even tighter financial control on spending in polytechnics and colleges and to open the way to even more thorough rationalization of courses.

The National Association of Teachers in Further and Higher Education, of which the majority of polytechnic and college lecturers are members, will also be unhappy with the plan. Both Natfhe and the local authorities support the creation of a national body but both prefer to stick to the Oakes pattern.

Officials of the local authority associations have felt for some weeks that a radical change of DES policy was in the air. Their suspicions were aroused when the Department seemed to lose interest in the joint working party under Mr Jones which has been examining the methodology of capping the pool.

Within the DES, civil servants have been in favour of a national body for some time, ever since the publication of the Oakes report. But ministers have remained unconvinced until very recently because it would require the creation of a new quango and the endorsement of a policy developed by the last Labour government.

Four new factors have now tipped the balance. The financial chaos produced by early attempts to cap the pool has persuaded ministers that a national system of finance is impossible under local authority control. They also believe that local control is a barrier to rationalization of courses and that the universities have been moving much more rapidly and purposefully in this direction under the prodding of the UGC.

Third, the Select Committee report and its recommendation that a council for colleges and polytechnics should be established has imposed a strict timetable for the DES's new initiative. Finally, the introduction of the block grant by the Department of the Environment has led to a decisive tilt between national and local government in favour of the former.

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White paper predicts more cuts

by Peter David

A dramatic downward spiral of spending on higher education up to 1984 is forecast in confidential plans for the next public expenditure White Paper, due for publication in March.

The plans show that the Advanced Further Education pool, which in the current year was fixed at £375m (November 1979 prices), will plummet to £282m by 1983-84.

Nearly all higher education spending by local education authorities is financed through the AFE pool, and the new projections assume a rapid 17 per cent fall in the number of lecturers employed—probably through large-scale redundancies.

The gloomy predictions are contained in a briefing document prepared by the Department of Education and Science for a meeting yesterday between Mr Carlisle, the education secretary, and members of the Council of Local Education Authorities.

The document reveals that the new reductions planned up to 1983-84 are smaller than others under earlier consideration by the Government. But it adds: "Even these reductions are fairly substantial. They imply a further 5 per cent decline in net expenditure on AFE over two years beyond the level now planned for 1981-82.

"If savings of this order are to be secured without significant loss either of educational opportunity or of quality, the implication is that some degree of rationalization will be called for."

According to a table below contained in the document, the Government expects to achieve the savings through a rapid reduction in the number of lecturers employed and increases in class sizes.

This strategy is designed to maintain student numbers, whereas earlier plans for bigger reductions predicted admissions declining by 1,000 students in 1981-82, 2,000 in 1982-83 and 3,000 in 1983-84.

The document reveals that last year's White Paper had assumed a 13 per cent fall in lecturer numbers between 1978-79 and 1983-84. In fact lecturer numbers have remained constant over the past two years and the new fall of 17 per cent will have to be compressed into the remaining time before January, 1984.

For local authority education spending as a whole, the document forecasts a new cut of £145m in 1982-83 and just under £100m in 1983-84, on top of the cuts announced in last year's White Paper.

Government spending plans for polytechnics and colleges in England

	1980-81	1981-82	1982-83	1983-84
MARCH 1980 WHITE PAPER (£m)	976	925	917	910
Assumed number of lecturers	25,600	24,000	23,900	22,500
Student staff ratio (SSR)	7.7	8.2	8.4	9.1
FURER CUTS (£m)		-12 (3.9%)	-22 (7.4%)	-28 (9.6%)
New assumption of lecturer numbers	25,600	23,600	22,500	21,300
New SSR	7.7	8.4	8.7	9.1
Savings through lecturer cuts (£m)		6	11	14
Non-teaching savings (£m)		6	11	14

MPs demand more funds for economic models

by Paul Flather

A powerful Commons committee is to demand more Government funding and support for the testing and use of computer forecasts of the economy produced in a number of universities and research institutions in the country.

A Select Committee chaired by Mr Edward du Cann, is putting the finishing touches to a report on monetary policy which is bitterly critical of the secrecy and lack of comparative testing of certain models.

The report expected before the March budget will call for Government and outside forecasting models to be made more freely available to university and research bodies for testing and comparison.

The report is certain to provide welcome relief to the Social Science Research Council at present pressing its commitments in the field of economic modelling and forecasting which accounts for £500,000 of SSRC research grants. There have been informal talks between the two bodies. There have been fears that in the interests of opening up the field, some SSRC-funded groups, which include the London Business School, National Institute of Economic and Social Research, Cambridge Growth Model, and Liverpool-Manchester 1980s, might lose funds after 1983.

The Select Committee will urge the Government to adopt a vitally important field and safeguard the freedom and diversity of research groups. It will note the importance of having independent academic bodies working in forecasting.

It will also note that while British forecasting work is among the best in the world on a methodological level, it is already falling behind, particularly behind American teams, in terms of application, computer software and testing.

One answer might be to develop a central testing unit.

Informal talks between the SSRC and the Select Committee have revealed the difficulties of model testing. The Treasury model for example although available since 1975 to three universities, is so big that few tests can be run.

The Select Committee is backing modelling to aid its work in monitoring Government economic policy, first tried by Lord Keynes in the 1930s.

Feature, page 7

PGCE freeze threatened

by Patricia Santinelli

A plan to save the ailing BEd degree by freezing recruitment to the more popular postgraduate certificate of education has been prepared by the Department of Education and Science.

A confidential paper sent to the Advisory Committee for the Supply and Education of Teachers indicates that if patterns of intake for both qualifications remain at 1980 levels, the number of initial teacher training places would decline from the planned figure of 41,000 (including 5,000 in university departments) to around 28,500 in 1983-84.

If however changes were made in the places and BEd/PGCE balance, the numbers would drop initially to only 32,000 for the same period and rise after that to reach just under 38,000 in 1988-89.

ACSET, which is to meet in the middle of next month, has been considering imposing a limit on PGCE recruitment. Its main reason is concern whether the PGCE provides appropriate training for the whole teaching profession—a matter which has to be considered in view of low recruitment to the BEd—and worry that if the PGCE surplus continued a greater number of teachers would be emerging in the market.

According to DES projections, training output for both qualifications based on constant levels would go from 16,200 in 1981 to 12,800 in 1988 and be very heavily concentrated on the PGCE and secondary specialist training.

But if BEd recruitment is encouraged to recover training output for both qualifications would go from the same figure with a major drop in 1985 to 10,000, to 13,100 in 1988, and be heavily concentrated in the primary sector.

To achieve this, BEd recruitment would need to rise from the present level of 5,500 to 9,500 in 1984-85 with the highest numbers taking three to four-year primary courses. Recruitment to the PGCE would need to be restricted from the current level of 9,700 to around 5,500 in 1984-85 for secondary courses and limited to 1,600 for primary/middle courses from 1981 onwards.

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Arabic institute for Lancaster

by Ngaio Crequer

The department of Arabic and Islamic Studies at Lancaster University, originally threatened with closure, is to be replaced by an institute with its emphasis on research.

The decision, made by senate last week, will take effect from October next year, and will mean no loss or redeployment of existing staff. This means that senate has now reprieved three areas of study recommended for closure or contraction in a rationalization plan last term.

The Russian department and a regional studies centre for the go-ahead in November. Final decisions on European Studies and Central and South Eastern European Studies are still awaited.

The future of the Arabic and Islamic studies department was put in jeopardy when the University of Kuwait, which had provided some funds, said these would not be continued. The university development committee said it could not authorise further expenditure and said there was no way the department could develop into a centre of strength in the 1980s.

But senate has now given its full backing to the new institute and Professor W. N. Arafat, head of department now on sabbatical leave, is likely to be its director. The institute will be a fully integrated part of the university.

The institute will carry out research and supervise postgraduate study, and will fulfill teaching obligations in Islam in religious studies.

Attempts to attract outside funding will continue and it is expected that the institute will attract high quality overseas students.

The strength of the new proposal is that Arabic and Islamic studies will preserve its identity within the university. A proposal that the professor become a one-man research unit, with the two other members of staff transferred to other departments, was unsuccessful.

This year has been the department's most successful in terms of recruiting students and it now teaches more than 100.

Changes in pay structure 'unlikely'

The local authorities are unlikely to agree to major changes in college lecturers' salary structure in the coming pay round.

The unions will come up against determined resistance when they seek many of the reforms which were set aside in last year's negotiations. The management panel of the Burnham Further Education Committee will try to avoid giving way on alterations which are either costly or far reaching.

The employers are already carrying out their own study of the structure not only in further education but in the schools as well. But officials do not expect any suggestions to be made in time for inclusion in the next pay round. The next session of the group, made up of local authority organization officials and chief education officers is planned for mid-February.

Elected members of the Burnham further education committee management panel have only just discussed the recommendation in last year's arbitration report for an independent investigation. The teacher unions have been pressing hard for the review to take place as early as possible, but the management side is known to be unenthusiastic about involving independent people unfamiliar with the complexities of the Burnham salary structure.

The National Association of Teachers in Further and Higher Education later repeated its demand for progress on setting up the review body. Its executive decided last weekend to call an early meeting of Burnham to seek its establishment.

The executive also ratified last week a deal on research staff, and endorsed the agreement on redundancy procedures and the codified statement of conditions of service, which needs ratification at next month's special council meeting before it is finished.

Eye to eye with a computer

A member of staff at the newly opened Aston University clinical neurophysiology unit tests a computer which is used to assess damage to a patient's eyesight. The machine is part of the £100,000 worth of equipment installed in the five laboratories at the unit, which is now the largest and most comprehensive centre in Britain for assessing brain damage.

Jointly funded by the university and Birmingham Area Health Authority, the unit was set up under a Government scheme for improving inner city areas and has been built in a converted brewery at the edge of the Aston campus.

Much of the unit's work will consist of assessing a patient's response to sound and sight. At present, several doctors need to be involved to determine the extent of a patient's possible eye and brain damage before treatment can begin. Now the Aston centre will provide facilities to carry out this work on one site.

The unit will also be concerned with investigations of epilepsy and other neurological disorders such as multiple sclerosis and the effects of brain tumours.

Apart from diagnostic services, training and clinical research will also be carried on at the centre, which replaces the previous neuropsychology unit at Aston University.

Polytechnic teachers fear colleges' power

by David Jobbins

The proposed national body for public sector higher education could be dominated by college interests, the Association of Polytechnic Teachers fears.

The union, with some 3,000 members exclusively in the polytechnics, tempers its backing for the Commons Select Committee recommendation with an uncompromising view of its own on how the Committee for Colleges and Polytechnics (CCP) should be constituted.

In a response to the Select Committee report, the association draws attention to the dilemma inherent in the proposals: the need for some form of national coordination which must be balanced against the great range of institutions on the other.

It points out there are some 408 institutions to coordinate in the maintained sector compared with the 44 homogeneous universities which although under the umbrella of the University Grants Committee still present some problems.

"At one end there are the 30 polytechnics and at the other 303 institutions having less, sometimes much less, than 500 full time, part time and sandwich students."

"It is believed this dilemma will be resolved if the CCP is set up with strong *individual* membership opposed to filling the committee with *representatives* of vested interests, and if the CCP is set an early date by which its progress in coordination can be reviewed", the association says.

On this basis, coupled with planned links with the UGC Department of Education and Institutions, the CCP, would be "very welcome".

The union has a harsh word for the omission of the Council for National Academic Awards from the report's recommendations, and says its role in maintaining standards would be strengthened by their participation or at least close liaison with the CCP.

"Otherwise, in the interim period at least, the demand for high standards will be subjugated, even more than being subjugated to the demand for strict economics".

The Government's response to the question of a national body is expected shortly.

Scottish students' union attacks 'out-stations'

by Olga Wojtas
Scottish Correspondent

Government proposals to establish "out-stations" to meet in-service training needs in areas where education colleges would be closed have come under attack from the Scottish National Union of Students.

NUS (Scotland) claims that the proposals are the Government's final concession in the face of the weight of education, social and financial arguments against their attempts to close three colleges.

Ms Jeane Freeman, chairperson of NUS (Scotland), said: "This latest attempt by George Younger to crawl out of a corner is nothing less than pathetic.

"The educational need to retain 10 colleges of education in Scotland has been soundly proven. The financial arguments have backed this up and the tremendous breadth of support won in opposition to the attempted closures indicates a firm determination to keep all 10 colleges.

"In the face of all this, we have a Government clutching at straws. What are these out-stations? In-service provision in central region or Lanarkshire requires more than the room and kitchen in Falkirk or Hamilton that Mr Younger is suggesting."

Earlier, in a written Parliamentary answer, Scottish Secretary Mr George Younger had said the out-stations would be a few rooms located either at the present college sites or in the same area, maintained by other "parent colleges".

Scottish Education Minister Mr Alex Fletcher has defended Scottish Education Department (SED) estimates of savings of £1.9m over five years from the proposed closure.

Mr Fletcher was replying to a letter from the chairman of the Scottish Conservative Party, Mr Michael Ancram, who pointed out there was a marked difference between the SED figures and a report from one of the threatened colleges, Hamilton, claiming that closure alone would result in additional costs of almost £2.5m over the three years.

Mr Fletcher said the discrepancies arose from "unreasonably expansive assumptions" made by Hamilton, including assumptions on the numbers of additional staff required to continue the work of Hamilton as another college, and assumptions on other additional costs.

However, Mr Fletcher added that although the assumptions on which the SED estimates were based were in his view reasonable, they could be subject to revision in the light of detailed consultations with the colleges concerned.

The SED estimates have also been challenged by the Association of Lecturers in colleges of education in Scotland, which has produced a detailed document maintaining that the closures will result in an increase in public expenditure of £3.34m over three years.

Harry Karr

Carlisle calls for shift to science

by Ngaio Crequer

Mr Mark Carlisle, Education Secretary, said this week that future prosperity depended on shifting the emphasis within educational effort towards science based disciplines, applied mathematics and technology.

"I imply no criticism of other aspects of degree works. It simply is a matter of facing reality that education must do more towards serving those sectors which create wealth and prosperity, those sectors which earn rather than spend."

Mr Carlisle, speaking at an Open University degree press conference, said this was the plea he had to make to all institutions of higher and further education and to school.

Referring to the recent increase in OU tuition fees, which had gone up more than inflation he said. "Naturally we regret that such a move was necessary but we concluded that in the present economic circumstances and at a time when other sectors of education have had to make savings, Open University students should be asked to make an increased contribution."

He said he foresaw no possibility of changing from discretionary to mandatory awards for OU students in the present economic climate although in principle he would say "yes" to a possibility of extending the scholarship scheme for encouraging more graduates to go into shortage subject teaching to the OU. He also revealed that his secretary is an OU graduate.

Professor John Horlock, the OU's new vice-chancellor, said that one in every 850 adults in the UK was now a graduate of the university. Over 1,000 OU graduates had trained as teachers or lecturers in science, mathematics or technology, or had switched to such posts.

He said the OU was continuing to attract substantial numbers of applicants although they were slightly down this year, the latest figures showing 14,765 applications, compared with 16,294 the same time last year.

On the new fee increases, he said there were some groups, including the unemployed, who would not be able to afford the new fees, although they were among those who could most benefit from such studies.

Upon graduating about 70 per cent said they had either benefited directly, or expected to, in terms of their career or job prospects.

Professor Horlock also said he hoped that the Open University could offer its expertize in the setting up of the Open Tech, particularly in the aspect on ensuring control of educational quality.

The biggest catch of all

Mr Graham Franklin, a fishmonger from Chippenham and now graduate of the Open University, studied by taking his books to market and taking time off from filling in his VAT returns.

Mr Franklin, who wanted to keep up with the rest of his family in the degree stakes, now intends to rename his business the "Academic Fish". His wife, Evaline, also took an OU degree, his daughter, Frances took biology at Cambridge, and son Paul studied botany at Cardiff.

His wife, one of his former customers, got him to enroll on the course. "I get up at 5 a.m to start work so I took my books to market and studied in the van. I am still going to remain a fishmonger, I love the job, but the course certainly stimulated a lot of conversation among the customers", he said.

Other graduates who attended a press conference organized by the OU included Mrs Hilda Summers, matron of Swallows Meadow Old Peoples' Home, at Shirley, Solihull. She said her parents did not consider university education suitable for women.

"I was able to look at my job from the outside and I was appalled. I realized that our part of the social services only picked up the crumbs. My degree has given me far more insight into the problems involved," she said.

Nearly 6,000 OU students graduated this year bringing the overall total since 1972, the first year of graduation, to nearly 45,000.

The line-up, from left to right is: a fitter, matron, analyst/programmer, fishmonger, police constable (Mr Mark Carlisle, Secretary of State for Education, Mr John Greenall, OU director of information, Professor John Horlock, OU vice-chancellor), commando, cashier, driving examiner, lift engineer.

Five polys head the big spenders' league

by Paul Flather

Large disparities in the amounts polytechnics spend on teaching each student—a form of unit cost—are revealed in the latest collection of expenditure statements, to be released shortly.

The amounts spent in the last academic year range from £2,550 per student by North Staffordshire, down to £1,490 spent by the City of London polytechnic. The figures are still estimates.

Heading the list of big spenders are North East London, Brighton, Teesside, Middlesex and Kingston. Polytechnics spending least include Liverpool, Birmingham, Bristol and Trent. Five polytechnics did not supply any financial information.

Mr Geoff Darlington, new chairman of the Polytechnic Finance Officers Group (PFOG) which compiled the information, said the figures had to be qualified before they were used to measure efficiency and cost effectiveness.

Factors that also have to be considered include the range of courses provided, the number of sites involved, the age and grading of staff, and the level of surplus resources caused by college mergers.

Overall polytechnics provided very good value for money, he said, educating more students during the year under review with the same resources. Student numbers went up from 156,000 to 165,000, expenditure from £291m to £371m, almost exactly equivalent to the 26 per cent rise in inflation.

"With money so tightly controlled any increase in expenditure in one area has had to be paid for by savings in another area", Mr Darbrough said.

Polytechnic expenditure statements number 1980 £5 plus postage from Sheffield City Polytechnic, Halford House, Pitsmian Square, Sheffield S1 2BB.

The higher education panel of the Chartered Institute of Public Finance and Accountancy has produced a new booklet recommending a series of regulations to improve financial relations between local authorities and polytechnics.

The panel calls for increased flexibility, long-term planning at least five years ahead locked into a national system of planning, and a switch to "output budgeting" which shows actual spending on services.

The most radical proposal in the booklet, to be published shortly, is to end the so-called "March madness" spending spree. These balances should be carried forward to the new financial year on a strictly controlled basis, the panel says.

Another regulation would allow institutions to plough back all income so long as there were no net costs. The philosophy must be to allow institutions to manage their own affairs effectively within local authority guidelines, it says.

Financial Regulations for Institutions of Further and Higher Education in the Maintained Sector.

ESTIMATED EXPENDITURE PER STUDENT 1979-80

(£000s PER STUDENT)

1	North Staffs	2.55
2	North East London	2.47
3	Brighton	2.45
4	Teesside	2.41
5	Middlesex	2.40
6	Kingston	2.31
7	Sunderland	2.29
8	North London	2.28
9	Wolverhampton	2.27
10	Thames	2.24
11	Wales	2.16
12	Hatfield	2.14
13	South Bank	2.14
14	Leicester	2.09
15	Portsmouth	2.08
16	Coventry	2.01
17	Sheffield	2.01
18	Manchester	1.97
19	Ulster	1.93
20	Lanchester	1.91
21	Newcastle	1.85
22	Trent	1.77
23	Bristol	1.73
24	Birmingham	1.68
25	Liverpool	1.60
26	City of London	1.49

(Huddersfield, Central London, Oxford, Plymouth and Preston did not supply figures)

SNP students fight closures

The Federation of Student Nationalists, the student wing of the Scottish National Party, has called for a united campaign by the Scottish universities against closures in departments.

Ms Lindsay Beaton, president of the federation, said: "It is time the principals stood up for Scotland's university tradition. So far they seem to have accepted the invitation to fall on their own swords rather than be butchered by the university grants committee.

"Perhaps now they have realised the folly of their determination to remain aloof from the last government's devolution plans in order to retain their 'financial independence'. Current events are demonstrating how illusory that independence is.

"Ms Beaton said there was no reason why students in an oil-rich country like Scotland should be faced with a diminishing range of educational opportunities.

Uganda's minister asks for time to pay

by John O'Leary

Uganda's minister of education made a personal appeal this week, for academic institutions to be patient with his country's students over the payment of fees and other bills.

Professor Isaac Ojok, who took office after the recent general election, was in London to meet Government officials and aid agencies, seeking support of a programme of reconstruction. Top of his list of priorities was the plight of more than 100 students stranded in Britain.

Their position stems from a lack of foreign exchange in Uganda with which to pay fees and maintenance allowances for those abroad. Even privately sponsored students are unable to obtain currency to bring out of the country and only those receiving international scholarships are avoiding hardship.

Short-term loans have been made to penniless students by the Africa Educational Trust to carry them over their immediate financial crisis, but it is understood that none of the Government or privately-sponsored students in Britain has been able to meet the deadline for payment of tuition fees.

Professor Ojok said he had met 13 students who had already been expelled from British institutions for nonpayment of fees. Last week a delegation from the Uganda Students' Union UK, flew to Kampala to plead for priority when the release of foreign exchange is possible.

In the meantime, Professor Ojok is asking institutions for their understanding in granting an extension of time limits for payment. "Our biggest problem is foreign exchange" he said. "We have inherited a bankrupt economy and we are doing everything possible to sort ourselves out.

"A number of institutions did not appear to be aware of these problems and were treating Ugandan students like any others who did not honour their commitments" he said. He appealed for their tolerance, adding that the Ugandan government was only too willing to pay as soon as it was in a position to do so.

"It is a unique kind of problem, especially when a country has suffered untold miseries for ten years" said Professor Ojok. "Surely the international community can be humanitarian enough to treat these students with the sympathy they deserve."

Although he could not be as specific about a date for payment, he said the settlement of his department's budget in April should enable foreign exchange to be released during the summer.

He also made five further requests to institutions and government departments in Britain, which he will be repeating on subsequent visits to the United States and Canada. Those were:

- to give the students the same latitude in the payment of accommodation charges and other bills;
- to provide the Ugandan High Commission with up to date information on Ugandan students in Britain;
- for Ugandan candidates to be given preference in the distribution of scholarship and fellowship places;
- to provide scholastic materials to help replace those looted.
- to provide staff on a short-term basis while enough are trained or attracted back to the country to run the schools, colleges and university.

Professor Ojok said he was asking all trained Ugandans to return to their country to carry out the work of reconstruction. "There are many students still in Britain who finished their studies a long time ago" he said. "They still think Amin is just around the corner or that the new government is as bad. I want to put it to them that the country is ripe for their return and needs them."

Heriot-Watt quits NUS

Students at Heriot-Watt University have voted to stay out of the National Union of Students. Last November a students' general meeting voted by 258 to 98 to leave the union.

Now, students have voted in a referendum to keep NUS out by 757 to 737, out of a total of 2,000 students eligible to vote. Heriot-Watt Student Union will no longer pay its NUS affiliation fee of £10,000.

The referendum was characterized by accusations and counter-accusations between the NUS and the Federation of Conservative Students. The FCS widely circulated anti-NUS material, which the NUS condemned as "lies and distortions". The NUS particularly criticized Mr Brian Monteith, the Scottish chairman of the FCS and vice-presidents of Heriot-Watt's student association.

Mr Monteith had denied any connection with a leaflet circulated with other anti-NUS material from Heriot-Watt which suggests that the NUS supports the IRA. This leaflet bears no printers or publishers name, which is illegal, and Ms Jeane Freeman, chairperson of NUS (Scotland), said the NUS had made a formal complaint to the police about it.

Heriot-Watt's decision means that only three of the eight Scottish universities are still affiliated to NUS, and one of these, Aberdeen, is about to have a general meeting on continued membership of the union.

Tonge takes over at Oxford Poly

Dr Brian Tonge, a chemist with wide-ranging experience in industry and teaching, has been appointed the new director of Oxford Polytechnic.

He took over this week from Dr Brian Lloyd, who has retired to concentrate on personal work after 10 years as director.

Dr Tonge, aged 47, joined Oxford as deputy director in 1971. He has worked as a researcher at Exeter University and has taught at Plymouth, the former West Ham College of Technology, and Wolverhampton College of Technology where he was head of applied sciences.

He has also worked for the General Electric Company, and a subsidiary of Rio Tinto Zinc. Recently he has been advising in setting up the Irbid Polytechnic in Jordan, to be opened by King Hussein this summer.

Dr Tonge said he thought it was essential that polytechnic directors had first hand experience of the industrial and teaching worlds before tackling the new job.

Central control urged as the answer to recruitment crisis

by Patricia Santinelli

A call on central and local government, the training institutions and the teaching professions to face up to the shortage of teacher training recruits has come from the dean of the Cambridge Institute of Education.

In a paper presented to the polytechnic's academic board and to the Nottinghamshire Education Committee, Mr Bill Middlebrook urges central control through the Advisory Committee for the Supply and Education of Teachers, which should take immediate action.

"Planning must be based on a realistic recruitment figure and not upon target figures which are not being met", he says.

He predicts a 46 per cent shortfall in 1981 recruitment to the BEd degree based on the shortfall in applications of 14 per cent compared with last year. Applications to the Polytechnic Centralised Admission are 20 per cent up on last year but there will still be a total shortfall of some 2,210 on a target figure of 18,600 for 1981, he says.

Regional bodies should be established to monitor the situation locally. Such central and regional control should encompass teacher education provision on both sides of the binary line to balance national provision is to be achieved.

Mr Middlebrook points out that since 1972 the decrease in initial teacher training in the university sector, because of its high concentration on the PGCE, has been 1 per cent as opposed to 69 per cent nationally. Serious consideration should be given to the redesignation of the BEd degree as a BA/BSc to overcome the disincentive to entry to what is recognised as an essentially vocational degree.

"This could go a long way towards remedying the problem of recruitment and career prospects of initial training graduates outside the profession as well as in stabilising the delicate balance between three to four-year and one-year PGCE training."

He argues that if the decline in BEd applications continues it will lead to fewer teachers in shortage subjects and an uneven distribution of training provision across too many institutions in those subjects as far as three to four-year training is concerned. For example, a total of 250 students recruited to BEd mathematics in 1980 was spread over 47 institutions realising an average of 4.13 students per institution.

One direct remedy would be to designate a limited number of institutions as centres of excellence in the training for shortage subjects.

House of Lords to debate EEC move

A powerful House of Lords committee has expressed grave political pressures within the European Economic Community have led to a massive reduction in funds for a programme which includes the movement of students.

But its report on the proposal, agreed by EEC education ministers last June, the European Communities Committee says that money is less even the smaller amount desirable.

The total budget was reduced from £16.2m over five years in 1978 to £7.6m over the same period in last year's agreement.

The cost of removing barriers to admission of EEC students to higher education institutions in the member states is estimated at £15m over 1980 and 1981.

The report is to be debated by peers on Monday.

Fees level error

As a result of a calculation error by the Department of Education and Science, the new fee levels for overseas students in maintained colleges, reported in last week's THES, have been revised.

The new figures are £2,670 for laboratory and workshop courses; £2,640 for classroom courses. Earlier calculations by DES failed to take into account the planned reduction in the unit of courses in advanced further education.

Macfarlane report rejects a 16-19 age group policy

No national policy or single pattern of educational provision for the 16 to 19 age group is recommended in the long-awaited local and central government Macfarlane committee report published this week.

Local authorities are urged to review their provision for the group and challenge the roles and responsibilities of individual schools and colleges, but are given no clear guidance.

The report of the committee which was chaired by undersecretary for education, Mr Neil Macfarlane, took two years to complete and had to be rewritten twice. The first time because it was uncomplimentary about sixth forms and aroused the ire of both Lady Young and Dr Rhodes Boyson, and the second time because it said almost nothing about sixth forms and tertiary colleges.

As a result the most positive note in the whole report is the acknowledgment that there are arguments of educational merit, demography and financial constraints which point inescapably to a break in schooling at 16 years in favour of educating 16s to 19s in fairly large groups in sixth forms or tertiary colleges.

However, the committee decided it could not recommend this because of the existing investment and the different demographic prospects of different local authorities.

A number of issues are identified in the report for comment such as the need for diversity of provision backed by an effective and coordinated system of careers education.

On teachers' pay and conditions of service, the report merely states that it looks forward to a reduction in the differences between school and further education which has caused problems for local authorities seeking to achieve close inter-sectoral collaboration.

Education for 16 to 19 Year Olds": a Review, obtainable from Publications Despatch Centre, Department of Education and Science, Honeypot Lane, Cartons Park, Stanmore, Middlesex HA7 1AZ.

Fighting fund on tenure

University lecturers are to set up a "fighting fund" to finance a defence of tenure if it comes under specific attack.

A decision is to be made when the executive of the Association of University Teachers meets next month. Union leaders will be considering both the size of the fund and how it should be financed. One option to be discussed is a levy of the union's 33,000 members.

Union leaders are determined to fight off any attempts to dilute the concept of tenure, and to preserve jobs.

"Having examined the financial circumstances there is no need for one single redundancy", AUT general secretary Mr Laurie Sapper said.

The union might be prepared to cooperate with a programme of frozen posts, redeployment of advertising, and rearranged terms to help cut heating bills.

Next week AUT headquarters officials embark on a massive programme of visits to all local associations to brief members how to cope with financial stringency at each university.

The THES reports on the Standing Conference of College Principals' meeting—and the bombshell that was dropped there

Stoking up the rumour boilers

The timing of last week's meeting of the Standing Conference of Principals and Directors of Colleges and Institutes of Higher Education at Stoke Rochford Hall near Grantham was uncannily exact—although perhaps a shade too early.

The college principals gathered for what is usually a fairly leisurely two day residential conference prepared to bemoan the lack of policy initiative from the Department of Education and Science and to grumble about local authorities.

Instead they found themselves in an atmosphere of progressively more substantial rumours that the DES was about to announce a radical and far reaching reform of the whole non university half of higher education, and was only inhibited from making an immediate announcement by the conventions of Parliamentary privilege (their plan is in the form of a reply to the Select Committee).

The same rumours had rather earlier come to the ears of the two local authority speakers at the conference, Angela Rumbold and Tony Charlwood. Speeches were hastily redrafted to include a ferocious preemptive strike against the Government's plan. The two inspectors present, Pauline Perry and Brian Kay, stayed solid under the local authority fire by sitting on their hands and staring at the floor, waiting to be rescued by their permanent secretary the next day.

The principals emerged rather shell shocked having been caught in the cross-fire of power politics. Sir James Hamilton duly offered blandishment and reassurance (the CLEA representatives having departed early to prepare their campaign of resistance). The conference dispersed with many of the participants feeling that if it had been held a few weeks later Stoke Rochford might have been the Woolwich of the 1980s.

Ten years of stringency forecast

by John O'Leary

Higher education can expect to continue in financial straits at least until the end of the decade, Sir James Hamilton, Permanent Secretary of the Department of Education and Science, warned at the conference

More emphasis should be placed on continuing education, he said, although this would have to be achieved within existing resources. There would also be further examination of possible measures to make the system more responsive to the needs of society.

"We are facing a funding crevasse of great depth with indistinct and crumbling edges", he said. "In higher education as a whole we have entered a period of reduced funding.

"We have left the warm and comforting arms of level funding and I want to say that it would be foolish to imagine that we would improve that position in the 1980s."

Higher education policy was now dictated by available expenditure, rather than student numbers, said Sir James. This would place even more emphasis both on the need for value for money and fair distribution of resources.

As a result, the DES would be pursuing its studies of ways in which the system can be influenced, as well as trying to promote continuing education.

Sir James denied that the DES was intent on introducing a form of manpower planning to determine numbers in the various subject areas of higher education. It was quite wrong to say that the Select Committee had turned down the Department's suggestion because no favoured solution had been offered.

However, ministers did believe that the shape of the system required further examination and there would be further studies to see how the market operates and how to make provision in the light of this information.

The network of courses was sufficiently responsive and innovative to work satisfactorily in times of expansion, he said, but the country could not now afford the risk of course provision ossifying while its competitors moved on into new fields.

Continuing education would be one important area for expansion, partly because of its advantages for updating knowledge in technological areas. But, said Sir James, the main burden of funding such an expansion would have to fall on those reaping the benefits—the employers.

He admitted that it might be idealistic to expect such a response in present economic circumstances, but pointed out that this was done in other European countries. It was important to look at the balance between initial and continuing education, rather than hoping for progress through "the erection of another edifice".

National body plans are 'a grab for power'

by Peter Scott

Local authorities will fight any DES plan to create a national body that is confined to a small number of polytechnics and colleges and on which they are offered only a minority stake, the principals were warned.

Mrs Angela Rumbold, vice-chairman of the AMA's education committee, told the conference that 45 per cent of all students in advanced further education, measured as full-time equivalents, and half of all the actual AFE students were to be found outside the polytechnics. Local authorities were also very anxious to encourage more part-time higher education.

She bitterly attacked the plans for a national body now being hatched within the DES as "a grab for power by central government and a very serious threat to local individuality if the centralists are allowed to win this argument."

Local authorities will believe there was a very significant role for higher education that was something other than that provided in the traditional universities, she added. They were also very worried that if higher education was taken away from them, they would be decapitated and the next stage would be to take away further tion and even schools.

Mrs Rumbold warned the polytechnics and colleges not to be seduced by the new DES plan. At the end of the day they could always get most of what they wanted from local government by negotiation and persuasion and in any case would always be underwritten financially by their authorities.

Angela Rumbold: "Some will go to the wall."

Under the planned national body there would be no margin for financial error and any attempt to ing in one year would lead to drastic savings in the next year.

"The Government is determined to contract the number of courses and perhaps the number of institutions also," Mrs Rumbold continued. "Any new national body will be intended to be very much concerned with rationalisation and contraction. All of you would have to justify every course to it. Some of you will go."

Mr Tony Charlwood, a local authority official, backed up Mrs Rumbold's warning. He said that the aim of the planned national body would be to produce a "map" of higher education sectors, with colleges and those with a high proportion of advanced work to be excluded entirely.

DES fires missile amid trench warfare

by Peter David

There was consternation at Stoke Rochford when news leaked out that the Government was preparing imminent legislation for a national body to take control of polytechnics and colleges out of the hands of local government.

Talks about some kind of national body have sputtered on and off for many years, but nobody expected the normally ponderous Department of Education and Science to put the finishing touches to so radical a change without lengthy formal consultations and informal soundings.

The most recent attempt to create a national body fizzled out after the 1979 election when the new Conservative ministers decided to ditch the recommendations outlined by the previous Government in the Oakes report.

When that report, which had generated mighty conflicts between local government and the poly directors, was put on the shelf, the warring factions settled down to sharpen their bayonets.

But even before the two sides have been able to emerge from their trenches it now seems that the DES has determined the outcome of the battle by silently firing a Cruise missile.

In the guise of a White Paper response to the recent Parliamentary select committee report on higher education, the DES will present the academic world with a *fait accompli*. Undoubtedly there will be a cosmetic period for consultation, but now Whitehall has taken the painful decision to wrench higher education out of local government, it is unlikely to change its mind.

If local government is indeed to lose effective control of its polytechnics and its biggest colleges, it will be the most radical change in higher education in Britain since Anthony Crosland's 1965 Woolwich speech created the binary system and made local government a key player on the higher education stage.

In many ways the local education authorities have played their part well, expanding and developing their polytechnics and colleges and underwriting their spending to the tune of some £400m a year. Their interference in academic affairs has been restrained, largely because of the presence of the powerful Council for National Academic Awards.

At the same time, though, there have been small but significant conflicts, which have become more important as the economy turned from boom to bust and the problem of higher education management turned from expansion to contraction.

A particular cause of friction was the 11 per cent working of the scoring system, which transferred money from all local education authorities to those which maintained polytechnics or large colleges.

This system was devised in recognition of the fact that higher education was in most a national service as a regional one, and that it would be unfair to expect individual providing authorities to shoulder the full financial burden of expensive institutions which catered for students from all over the country.

Gordon Oakes: compromise solution.

But the pooling system, for all its technical ingenuity, emphasised the ambiguous role of local government in providing national higher education.

Local authorities with no major institutions of their own resented paying open cheques to others, while they were also frustrated by the lack of local political control over the spending of money being "controlled" by local councils which were merely disbursing nationally collected funds.

It was to sort out these dilemmas that in 1977 Mr Gordon Oakes, Labour's minister for higher education, set up a committee of councillors and principals. The Oakes committee met for more than a year to try to bridge the gap between polytechnics desperate for independence and local authorities equally desperate to keep their stake in higher education.

Oakes's solution was a compromise which offered just enough crumbs to each side to win grudging support. The polytechnics were to get the national body they wanted, but it was to be independent UGC model that had in mind. Local government was to be mollified by a commanding membership on the proposed quango.

The Oakes quango got as far as draft legislation before it was scotched by the return of a Conservative government in 1979. Dr Rhodes Boyson told Parliament that the Oakes solution was bureaucratically cumbersome, and that the entire problem would be reviewed.

At the Government's request the problem of higher education financing topped the agenda of Mr Christopher Price's new labour committee on education last October, but, too, called for the creation of a national body, the Committee for Colleges and Polytechnics (CCP).

Perhaps mindful of the political squabbles that had dogged and delayed the Oakes committee, the MPs on the select committee left the constitution, and powers of the CCP vague. But they assumed that local government would keep a powerful stake in higher education.

In retrospect, the MPs' assumption appears to have been excessively cautious. The DES itself is now rumoured to be interested in a national body on which local government representation would be small and its financial clout negligible.

One reason for this unexpected reversal of DES philosophy is likely to have been the succession of episodes like Clay Cross, Lambeth and Huddersfield where relations between the polytechnics and their authorities have been stretched to breaking point.

But the more profound reason for the new DES line is more likely to have been growing feeling in Government circles that higher education spending, particularly in the maintained sector, is escalating out of control.

By "capping the pool" the Government has been able to hold down spending through the application of crude cash limits which are incapable of tailoring the system to the manpower requirements of the economy. What Dr Boyson and his colleagues want is a mechanism both for reducing spending and distributing the scarcer resources to socially "relevant" courses.

Since the demise of the Oakes report the DES has been slowly developing one such mechanism. A working group, under Mr Stephen Jones has been considering the scope for the extension of cash limits by devising average unit costs for students on particular kinds of course.

If a system of unit costs were perfected the Government could know exactly how many students in given subjects it could educate for a given sum of money. Unit cost arrangements could be administered through a national body in a way that the present tangled funding mechanisms could not.

For the local authorities, news that the DES has marched quickly ahead towards a national body without consultation is profoundly worrying. The Government could hardly have made its lack of interest in the recently created higher education committee which the Council of Local Education Authorities hoped would be some the embryo of a local government dominated national body.

Polytechnic directors, on the other hand, are likely to be ecstatic at what looks like belated recognition of their case for higher education to be put in the hands of central government or one of its creatures.

The big question for the future is whether the national body is seen by its architects just as a neat solution to the tangled problem of the polytechnics or as a potent tool with which to check two decades of growth in higher education and throw the gears into reverse.

Merritt plea for greater cooperation

Nell Merritt: critical

Universities have gone off with illfet steak while the polytechnics and colleges have been left to scrag end, Mr Nell Merritt, director of Ealing College of Higher Education and chairman of the standing conference, appropriately told the conference dinner.

He criticized the "gulf" between the polytechnic principals and the college principals which had weakened the non-university sector in the past. They had also failed to present a united and coherent voice.

Mr Merritt appealed for more introspection in the future and greater cooperation between polytechnics and colleges. "Such cooperation was not achieved lightly—would be all non-university higher education and the traditions it represented.

He also criticized the central and local authorities which often behaved like "a naked fight for power" and concerned more with "the need to resolve what is sometimes the exercise of power." They had to make up their minds whether they simply wanted the easier task of controlling expenditure or the more positive, the desire to build up a creative complement to the universities provision.

"If local authorities want to become content with a system of binary universities and binary arrangements that preserve the management and planning of the binary line, then they will fail to fight tooth and nail for equality of provision for both sides of the binary line, then they will have no right to preserve their colleges against them", said Mr Merritt.

North American News

Baltimore 'astronomy capital'

WASHINGTON from Clive Cookson

"There's true excitement in the prospect that Baltimore will now become the world capital of astronomy", exclaimed Johns Hopkins University president Steven Muller after hearing that the National Aeronautics and Space Administration (NASA) had selected his campus in Baltimore as the site for the new Space Telescope Science Institute.

Dr Muller's excitement was understandable, for the contract had been the subject of intense competition between rival university consortia putting forward different sites. The institute will be the ground base for the $1,000m space telescope which NASA plans to put in orbit around the earth in 1985, and it will therefore be at the centre of international astronomy for the rest of this century. Of course, in the present era of fiscal restraint, any major new research institute is a rare plum.

The Association of Universities for Research in Astronomy, a university consortium that has traditionally run most of the large American telescopes, will build and operate the space telescope science institute on the Johns Hopkins campus. The host university will finance the construction of the $6m building, but most of its operating costs, estimated at $10m a year, will come from NASA.

The institute will have a permanent staff of about 150, including 40 astronomers, who will be responsible for directing observations from the 10-ton observatory and analysing data. Fifteen per cent of them will be Europeans, since the European space agency is contributing that proportion of the project's budget. In addition to the resident scientists, up to 200 guest astronomers from all over the world are expected to visit Baltimore each year.

The space telescope has a lens 2.4 metres wide. That is less than half the diameter of the largest ground-based instrument, the Mount Palomar observatory in California, but because it will be operating above the blurring veil of the atmosphere NASA expects the telescope to open up a volume of space 350 times greater than astronomers have been able to see from earth.

From its orbit 500 kilometres up, the space telescope should send back the first images of planets circling nearby stars and of individual stars in distant galaxies. "It will unlock the heavens the way the microscope unlocked the cell", said Arthur Code, of the University of Wisconsin, who will be the new institute's acting director. "The difference is, this will be on a far grander scale."

The telescope will be lifted into orbit by the manned space shuttle and left there to function automatically. Every two or three years the shuttle will revisit the observatory so that astronauts can service its instruments, and once every five years the whole thing will be returned to earth for major refurbishment. Its total lifetime should be 20 years or more.

The shuttle's maiden flight is now scheduled for March 17, three years behind the original target date. The launching of the space telescope has fallen less far behind—early 1985 instead of late 1983—because NASA has moved it up the queue of shuttle users. But many observers are not convinced that the space agency has licked the appalling technical problems that have delayed the shuttle, and further delay would not be surprising.

A NASA selection board argued over the merits of Johns Hopkins and its rival finalist, Princeton University, for nearly a week before settling on the former. Apparently the greater scientific prestige of Princeton was outweighed by the attractions of Baltimore as a reviving metropolitan centre with relatively cheap housing and an international airport. Hopkins was also favoured by its proximity to NASA's Goddard Space Flight Centre, where the telescope's data will first be received.

Johns Hopkins University: site of the new institute.

Antivivisectionists attack UBC

Extreme antivivisectionists are mounting an increasingly aggressive campaign against the University of British Columbia, which uses large numbers of animals for research. University officials have been threatened with violence, their homes have been spray-painted with animal liberation slogans, and they have been receiving hate mail and ominous midnight phone calls.

The tactics of these Canadian antivivisectionists seem to mirror the growing violence of the Animal Liberation Front in Britain, according to a UBC official, who asked not to be named. "I don't want to be attacked myself," he said, warning that "reporters covering this issue here have invariably received hate mail themselves. As a result it's becoming harder and harder to get people from the university to stand up and defend our policy on this".

One person who has stood up is John Gregg, coordinator of the UBC Animal Care Centre. He was threatened with knee-capping after a public hearing on a decision by the City Council of Chilliwack (a town near Vancouver) to turn over unclaimed dogs from it's pound for university research.

Although the Royal Canadian Mounted Police is investigating the campaign, they have not yet been able to track down any of the individuals responsible for intimidating university officials and researchers. A radical group called the Animal Defence and Anti-Vivisection League has been organising protests against UBC, but it is not clear whether its members have also been responsible for the illegal activities.

"Some of the hate mail directed at the people doing animal research is pretty vicious stuff", said a university official. "Posters inciting violence have been put up around Vancouver, and their families and children are very upset." The slogans painted on researchers' homes and the threatening telephone calls late at night are causing most worry.

The antivivisection campaign has been partially successful in the sense that the university is finding it much more difficult to procure dogs for use in research, and some experiments have been affected. And the university public relations office frequently receives calls from cat and dog owners whose pets have disappeared and who believe the university is responsible.

The university maintains that it sticks to rigid standards to ensure humane treatment of animals in experiments. Until recently, a spokesman said, anyone was welcome to come and inspect the facilities for themselves, but this open-door policy has been curtailed as a security precaution against possible sabotage by the antivivisection extremists.

Government passes plans for experiments on humans

The federal government has approved new rules for experiments involving human subjects, which apparently meet the objections of social scientists who complained vociferously about the first draft of the regulations.

The final version of the regulations was signed by the outgoing secretary of health and human services, Patricia Harris, shortly before she left office, according to the *New York Times*. The Reagan transition team approved them and they will soon be published officially.

The first draft, published in 1979, alarmed social scientists because the proposed rules would have made them comply with the same review procedures as medical researchers. A sociologist observing public behaviour on the street, or an historian seeking to interview a former president, would have had to seek approval from his university's "institutional review board" just like a pharmacologist who wanted to test a new drug on patients.

But the Department of Health and Human Services (the agency responsible for regulating federally funded research on human subjects, has taken their objections into account. The final version of the rules exempts five broad categories of research from review. They include educational research, surveys and interviews (unless there is potential invasion of privacy), observations of public behaviour and research using existing data and documents. Interviews with public officials and politicians are specifically exempted from review.

Nor several years any institution receiving biomedical research funds from the federal government has been required to set up a review board, including lay and community representatives.

Professors ask Reagan for more direct assistance

The American Association of University Professors has asked President Reagan to spend more federal funds on direct assistance to colleges and universities. That is the most important point in a 12-page letter from the AAUP to the new Administration setting out a role for the federal government in higher education during the 1980s.

Although the recommendation flies in the face of the Reagan administration's determination to cut no military federal expenditure, AAUP general secretary Irving Spitzberg said he thought the Government would realize that it was essential to end the system that has existed for the past 20 years, under which "the economy of American higher education has been directly tied to enrolments." Otherwise, Dr Spitzberg said, the financial and academic health of colleges and universities could deteriorate very rapidly if students numbers decline over the coming decade, as some experts predict.

At present most federal aid to higher education is related directly to enrolment, in the form of student loans and grants. To suggest change in emphasis is not to recommend that the government withdraw its student financial assistance programmes, the AAUP told President Reagan. Instead, it means that the student assistance programmes must now be supplemented by institutional assistance programmes which are related directly to improving or maintaining the quality of teaching and research and which do not depend on whether enrolments are increasing or decreasing."

Another idea put forward in the letter is federal aid to colleges and universities on a regional basis.

Chemistry department boils over at Wisconsin

from our North American editor

Two members of the chemistry department at the University of Wisconsin, Madison, have had stomach ulcers and a third suffered "severe mental depression"—caused, it is said, by a bitter feud between chemistry professor Walter Blaedel and his colleagues.

The long and agonizing breakdown of relations between Dr Blaedel and his fellow chemists has become an academic *cause célèbre* in the United States, partly because the University of Wisconsin is ranked among the top ten American institutions for chemistry. The case also dramatizes the potential for conflict between the academic freedom of an individual and the welfare of a whole department.

Another reason why the dispute is so visible is that the University of Wisconsin has been amazingly conscientious about keeping outsiders informed about its private agonies. The Madison press office has sent journalists a steady stream of news releases, including one of nine pages last week, relating every detail from the point of view of Dr Blaedel as well as the chemistry department. Such candour is hard to believe for a reporter reared outside the United States.

This month the dean of letters and science at Madison, David Cronon, relieved Dr Blaedel of all teaching duties for the coming semester, citing his alleged "unstable and bizarre behaviour in recent months". Professor Blaedel had already refused to teach one course, Chemistry 221, on the grounds that it was "improperly assigned" to him; he also questioned the safety of the teaching laboratory.

Last November tenured members of the chemistry department voted 31-0 to ask the university to retire Dr Blaedel at the end of this academic year, when he will be 65. Normal retirement age at the university of Wisconsin is 70.

Dr Blaedel, who is internationally recognized for his work in analytical chemistry, refuses to retire five years early, saying he will hire a lawyer to fight against his dismissal which would be "a terrible waste of talent". The final decision will be up to the University of Wisconsin board of regents, if the Madison faculty committee and campus chancellor Irving Shain approve the chemistry department's request to remove Dr Blaedel.

It is hard now to disentangle the real roots of the dispute from all the bitter accusations and counter-charges that have been piling up. But they seem to go back about 10 years to the time when Dr Blaedel started pushing hard for changes in the course content and procedures used by his colleagues in the division of analytical chemistry.

According to Dr Blaedel, he insisted that direct involvement in lab instruction "required from professorial staff", but his fellow professors would not cooperate. They say they agree with his point but disagree about the nature of the experiments. They feel that their insistence on introducing "modern methods of analysis" such as spectroscopy alienated Dr Blaedel, who specializes in the "more traditional chemical methods".

"The analytical group spends an inordinate amount of time in their lab courses", said Department chairman Burry Trost. "They wanted to modernize them; Blaedel has simply not kept up."

Dr Blaedel's continual criticism of his colleagues' courses, and particularly his attack on a graduate examination in front of the students who took it, outraged the chemistry faculty. According to the university news office, Dr Blaedel's alleged "breaches of academic etiquette" included bringing a bullhorn to a faculty meeting and using, or abusing, departmental mailing and duplicating privileges to mount a personal letter-writing campaign. The department responded by "making at least one abortive attempt to censor his mail and then enforcing a limit on his departmental mailing and duplicating privileges".

But Dr Blaedel said the hardest blow came in 1976, his thirtieth anniversary year at the University of Wisconsin, when the chemistry faculty split the analytical chemistry division in two. He was put in a special section on his own (called the "Division of Analytical Chemistry — chemical methods" apart from the half dozen other analytical chemists. "After that, there wasn't anything they could do to hurt me more", he said.

Dr Trost insists that the split was necessary because none of the other analytical chemists could work in the same division as Dr Blaedel.

The next round in the dispute was in 1978/79, when Dr Blaedel first refused to teach chemistry 221, "introduction to analytical chemistry", claiming it was assigned to him without his agreement. He also made well-publicized allegations that the system by which acids and other hazardous chemicals were dispensed in the teaching laboratory was unsafe.

During 1979/80 a campuswide committee investigated Dr Blaedel's refusal to teach the course and came down against him. He was reprimanded and the university reduced his salary by $7,000.

Professor Blaedel did take chemistry 221 last Semester "under protest" but refused to do so again this spring. Meanwhile he has resumed his letter-writing campaign, including an accusation that the department spent teaching funds on research.

Dr Trost says "desperation" drove the department to vote unanimously for Dr Blaedel's retirement. "They're just not going to take it any more. And that includes me," TJ departmental chairman said.

The internal dispute has generated a file of correspondence an inch and a half thick just since last June.

He has a missionary zeal to correct what he sees as the deficiencies of his colleagues," Dr Trost said of Dr. Blaedel.

Carter adviser is NAS president

Frank Press, the geophysicist who served as presidential science adviser throughout the Carter administration, has, as expected, been selected president of the National Academy of Sciences. He will succeed Philip Handler, whose second six-year term expires this summer.

Dr Press, who is 55, is best known for his work on earthquake prediction. He has been a member of the NAS, a giant version of British's Royal Society, since 1959, and was chairman of the Department of Earth and Planetary Sciences at the Massachusetts Institute of Technology.

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Overseas News

Censorship changes hit new delays

Proposals for new censorship laws in Poland, which would remove academic publishing from the censors' control, have run into deadlock, Warsaw radio announced last week. A revision of the present law to reduce state control of the press, publishing and the stage to the minimum needs of national security were promised in the Gdansk Accords which ended the summer's industrial unrest.

The first draft of such legislation was promised by November 30, afterwards extended to January 10 due to "technical difficulties". Now this deadline, too, has expired, at a moment when party hardliners are pressing for a revision of the more controversial terms of the Accords.

The difficulty centres on whether the censorship should be accountable to the Council of Ministers (the Government) as favoured by Minister of Justice Baffa, or to Parliament as a whole—the opinion of a public drafting committee chaired by Professor Klemens Szaniawski, a leading Polish philosopher. In effect, however, the minister's proposals amount to a preservation of the status quo — which Professor Szaniawski's committee will not accept. Public discussion has been promised, but it is not clear what form this is to take.

During the last few months, there have been major relaxations. Emigré poet Czeslaw Milosz is perhaps a special case—the 1980 Nobel prize for literature turned him overnight from a blacklisted author to one only from the underground publishing house NOWA to a national figure whose works were being rushed into official editions. Other banned authors, however, are quietly being reabsorbed into the official system, although one of them, Jerzy Ficowski, has refused to write for the media which formerly ostracized him.

Czeslaw Milosz—a special case

However, the underground press, and in particular NOWA (an acronym for Niezalezna Oficyjna Wydawnistwa — independent publishing house), still has a role to play. As its founder and director, Miroslaw Chojecki, stressed during a recent visit to London, freedom of publishing depends not only on the written regulations but also on the prevailing social climate. His fear, he said, was that even under relaxed censorship regulations some editors might impose their own self-censorship and withold vital information from the public.

During the past four years, NOWA's own work in filling the information gap has been considerable, ranging from underground newspapers (its monthly *Robotnik* —the Worker—during the height of the summer unrest had a printrun of 60,000) to academic works. These are produced in cooperation with the Society for Academic Courses (the "Flying University") time.

NOWA, said Mr Chojecki, produces a series of pamphlets of 30 to 40 pages, giving the text of SAC lectures and selling for some 15 to 20 zloty (around 30p), with a printrun of 20,000 copies. The SAC, like NOWA, is still, technically speaking, outside the law. Nevertheless, the lecture pamphlets are rapidly distributed throughout every academic centre in the country. So too are the more expensive SAC texts —books of 100 to 200 pages; these include translations of philosophical and sociological works (Bertrand Russell, George Orwell, Thomas Masaryk) and transcripts from colloquia and discussions between leading SAC members. The SAC is also planning a series of texts for school teachers, which they can use in planning their regular lessons on history, literature and similar subjects where the state syllabus is subject to ideological constraints. These, however, said Mr Chojecki, are still in the preparation stage.

Publishing outside the law has not, of course, been easy. NOWA has had to wage a running battle with the police, and its printers use various ploys to evade surveillance on their way to the "printing works" or storage point. Retailers, it was found early on, should never stock more than 15 to 20 copies at a time, making police raids virtually unproductive. Nevertheless, police searches of the homes and persons of those suspected to be operating underground presses became commonplace. Mr Chojecki was arrested 44 times, and still has an appeal pending against a suspended sentence for allegedly stealing a duplicator (in fact, a discarded machine which he and his co-workers had rescued from being scrapped).

Mr Chojecki's long-term hope—NOWA is its voluntary self liquidation—as soon as new legislation and a social climate firmly committed to press and academic freedom make its work redundant. The latest setbacks to the censorship bill, however, suggest that NOWA will still have a job to do for some time.

Student unrest disrupts the provinces

from Guy Neave PARIS

In the remaining months before the presidential elections unrest continues to plague French universities. Last week saw a general stoppage throughout the country by assistants and junior lecturers in support of the demand that part time staff should be given permanent posts.

At the universities at Besançon, Toulouse and Dijon unrest has been endemic over the past month. Protest against the cuts in graduate courses have continued to inspire student demonstrators though there has been a notable change in tactics. Students are now seeking by various means—including an attempt to occupy the local radio station at Toulouse—to win over the local populace rather than demonstrating on their own.

At Besançon teaching came to a halt on January 19 as students occupied the citadel in the town centre. At Toulouse the situation is confused. As the university of Toulouse 2—specializing in sciences —returned to work its colleagues in Toulouse 3 took over the administration office and organized "an open day" in an effort to appeal to the local inhabitants.

At Dijon where the last month has seen regular student processions throughout the city, students took to sweeping the streets in a gesture to draw attention to the effects of the cuts. However, even in Dijon the student body appears split. The social scientists are holding out but students in humanities and law are attending lectures again.

The latest round of student unrest is strikingly different from its predecessors. The running is no longer made in Paris. Initiative has passed to the provinces. Equally significant is the lukewarm attitude of official student unions towards present action.

Furthermore there is considerable suspicion among student activists towards their union colleagues. Observers are struck by the fact that the initiative appears to have passed into the hands of ad hoc groups, few of which are identified with any political party.

The care with which student unions have distanced themselves from some of the more spectacular actions—blocking a national highway at Toulouse for instance—can be attributed to the run up to the presidential elections. Left-wing student unions are unwilling to be identified with unrest that might prejudice the electoral chances of the parties they are affiliated to. The other side of the coin is that many students feel unwilling to lend themselves to party political manoeuvrings.

Admissions to be reformed

from Orjan Bjorkhem

Sweden is to change its complicated university admissions system in the wake of widespread accusations that it favours older students against intellectually gifted school leavers.

The existing system, introduced in the 1970s to entice more working class students, was designed to reduce the importance attached to school examination results and give more weight to natural ability and work experience.

Work experience was widely defined, with time spent as a housewife, for example, counting as much as employment. According to its critics, the new system tended to favour age over ability.

Under the system, the highest score a university applicant could gain through school experience alone is five points. The five points maximum therefore quickly became a minimum for the most popular university courses.

As a result, some outstanding students were prevented from taking the courses they wanted while students with lower marks were admitted if they were older.

The disappointed applicants who then entered other courses could not win next time round either, since studying is practically the only occupation which does not qualify as "work experience".

The government has now taken steps to improve the situation. From this autumn, students with top marks who have failed twice to enter the university of their choice will be placed first in queue. But the new system will also prevent universities from admitting more than 30 per cent of students straight from school.

Students and lecturers complain about the existing system, have been bitter. Because applicants to popular courses tend to get similar marks, the admission authorities have been forced to draw lots to choose the lucky candidates.

It remains to be seen whether the 1970 reforms improved the higher education prospects for lower social groups. But it is already clear that it has become very difficult in Sweden to go to university straight from secondary school.

Environmentalists 'being subjected to suppression'

from Geoff Maslen MELBOURNE

Academics working in the field of environmental research and teaching are being subjected to attempts to suppress their findings, it is claimed.

Dr Brian Martin, a research assistant in the department of applied mathematics at the Australian National University in Canberra, says that powerful groups outside the academic community, particularly corporations and government bodies, have strong influence on teaching and research organizations, and on the content of "knowledge formulated and verified in Academia".

In a paper prepared for the magazine *The Ecologist*, Dr Martin documents and discusses 10 instances where the work of senior and junior academics has been subject to various attempts at suppression. Most of the attempts were successful either by the non-renewal of the academics' tenure, by forcing them from their jobs or by the refusal of grants bodies to allocate money to their research projects. Dr Martin claims the publicised cases are a fraction of the total.

"It is highly likely that outright attempts at termination of employment are greatly outnumbered by non-renewals of non-tenured positions, by failures to hire and promote and by pressures leading to non-initiation of particular types of environmental research and teaching", Dr Martin says.

Dr Martin cases he quotes universities in Australia and New Zealand are accused of taking action against controversial academics. In one instance a research officer at an institute of medical and veterinary science was outspoken on environmental issues, especially on the impacts of environmental chemicals.

The researcher started his own work on testing substances for mutagenic properties and prepared a report on the hazards of ethylene oxide as a sterilant, which he gave to workers using the substance. The institute received letters of complaint from chemical companies. Plans were announced to close the environmental mutagens testing unit, and to transfer the researcher to another department with a $A10,000 cut in salary. The director of the institute wrote rebuking the researcher for releasing the report to workers and instructed him not to release material to other staff members without approval. In another instance, a senior lecturer is introduced and taught the first Australian undergraduate course in environmental and natural resources law. He was later told that his application for tenure would be denied.

In a New Zealand university, a senior lecturer in biochemistry was publicly active on issues of nuclear power, nuclear weapons and the use of certain herbicides. Disciplinary proceedings were initiated by the university after the vice-chancellor had received a letter from the head of the lecturer's department. On grounds for dismissed were given but the university council later proposed further probation with the implied cancellation of accumulated leave entitlement.

Dr Martin argues that purely academic or scientific judgements are almost always insufficient as reasons for the efforts at suppression. He says that in nearly every case documents the research output or teaching performance of the individual under threat was well above average.

"The suppression is illegitimate by normal scientific and academic criteria and the suppression often are more systematic and sustained than first meets the eye", says Dr Martin. The available evidence suggests that suppression is closely connected with political and organizational vested interests, paradigm disputes and combinations of those, he says.

Because environmental knowledge ship is often seen as linked to the "politics of the environmental movement, Dr Martin argues, it often presents a challenge to established practices and policies of powerful organizations. It often challenges the dogmas of various scientific disciplines.

Dr Martin claims that leading scientists and academics have taken an active role in many efforts of suppression.

He suggests that one policy challenge to the links between powerful scientists and powerful non-scientific groups is public exposure.

Colleges to choose students

China's college enrolment system has improved since 1977, but there are still faults which hinder the selection of the best students and prevent improvements in quality, according to leading university presidents.

Yang Qi, chairman of the Shanghai College Entrance Examination Committee and vice-president of the Tongji University said a recent meeting put college enrolment that universities and colleges had to rely on the decisions of government civil servants with little knowledge of academic affairs.

In future, he said, universities and colleges themselves should be allowed to select qualified students. He likened the current college entrance examination in China to the ancient Imperial examination, when candidates throughout the country gathered in the capital for selection, having local authorities to write for the media which formerly ostracized him.

A better system would be for individual colleges to have the right to reject candidates considered unsuitable for certain specialisms, even if they had passed the national qualifying exam.

Liu Fobian, president of the East China Normal University, suggested that students who apply for some specialist subjects be given a second examination, if necessary, to test their knowledge of the special fields before admission.

Student journalists, for example, should be tested for their writing, students are tested only on their ability in maths. At present such general knowledge of the Chinese language.

A plan for the gradual reform of the college entrance system was suggested at the meeting by Su Buqing, president of the Fudan University. Under his "3+X" universities would have a joint entrance exam prior to the general exam. Candidates for the special selection, having local authorities exam would have to be personally recommended by the secondary schools.

Graduates face jobs shortages

Between 6,000 and 8,000 university and college graduates will fail to find suitable employment each year during the 1980s unless drastic steps are taken to match job opportunities with higher educational qualifications, according to a report published by a government agency.

This emerges from a report submitted to the Israeli cabinet by a team headed by education minister Zevulun Hammer analysing job prospects for graduates. On the basis of this report the government is expected to appoint a committee to investigate the problem in detail.

The Hammer committee report anticipates that Israel's six universities will produce 5,000 graduates annually (their total student population is some 55,000) and teacher training colleges, technical colleges, nursing schools and other academic institutions will produce another 3,000.

To save industry, including the building trade, will need only 3,000 professionals.

Kenya may get second university

A working party has been appointed to prepare recommendations for a second university in Kenya to supplement the facilities of Nairobi University.

President Daniel Arap Moi last week appointed a working party headed by Dr Colin Mackay, former president of the university of New Brunswick and former executive director of the Association of Universities and Colleges of Canada, to prepare detailed recommendations and plans.

Other members are the Nairobi University vice-chancellor, Professor Joseph Mungai, heads of university departments, and government officials.

Paul Flather looks at the state of economic research

Knocking on the door of the public purse keeper

It was George Bernard Shaw who made the notorious remark that if all the economists were laid end to end they would not reach a conclusion; Ionesco said you can only predict things after they have happened. Nevertheless economics matters; and perhaps none more so than the branch of macroeconomics forecasting used as the backcloth to so many vital policy decisions.

There are about a dozen important economic modelling groups in Britain at present, varying in complexity and approach. Stockbrokers Phillips and Drew use some 200 equations in their model, the Cambridge Growth Model (CGM) group use 3,000, the London Business School (LBS) operate a fundamentally monetarist model, the National Institute (NIESR) a Keynesian model. Excluding Government and city groups, there are four major public groups, known in the language of the Social Science Research Council (SSRC) as the "Gang of Four", because they began life on SSRC funds and have been consistently funded ever since.

The Gang of Four includes the NIESR, the London Business School, the Cambridge Growth Model group and the Cambridge Economic Policy Group (CEPG). The bulk of their money comes from the SSRC—accounting for 11 per cent (£0.5m) of its total research grant funds, some 3 per cent of its total funds.

The SSRC last summer set up a special committee under its chairman, Michael Posner, himself an authority in the field, to review its commitments to economic modelling research. The committee is looking at the scale and variety of finance available to the groups, and at criteria to judge grant applications from existing members of the SSRC club as well as new entrants. A first draft should be ready in the spring, a fuller report, probably with specific recommendations on funding after 1983 by the autumn.

These deliberations have been given extra import by the interest shown in modelling and forecasting by the Select Committee on the Treasury headed by Edward du Cann. Members of both committees have been holding informal discussions, and it is apparent that the Select Committee in its report later this year will call for a diversity of models to be maintained, and for more funds made accessible by university and research institutes to existing models. One problem is that the Treasury model, although available for use, is prohibitively expensive to run through computers. The Select Committee also wants far more rigorous testing of the models. Consumers must be able to make post mortems, the committee is likely to suggest.

A number of factors combined to force the SSRC's hand to clear what is to all intents a political minefield. All the Gang of Four developed their models on SSRC funds at different times and in different directions. There has been no review of these developments. Secondly, the technology and software of modelling has advanced in leaps. Thirdly stockbrokers and commercial groups have burst in on the field; it is appropriate for the SSRC now to consider the relation between public and private funding in the field. Fourthly, there are doubts about how technically and theoretically advanced British modelling groups are compared with rivals in America, France, Germany or Japan.

While many economists, including Posner who has visited leading groups, subscribe to the view that modelling in Britain is as theoretically advanced as anywhere in the world; most believe it falls down on the application side. Paul Ormerod in *Economic Modelling* says Britain is underdeveloped compared with the United States, even if the gap is first developed here in the 1930s when Keynes decided to take on the Treasury. He suggests a clutch of reasons: the relative lack of funds, which affects the cost of particular modelling teams; forecasting and modelling grew up side by side not together; and the British "circus atmosphere" where too much time is spent advising, little analysing. He notes even the hugely sophisticated Treasury model was not fully computerized until 1970.

The main reason for the review emerged from meetings of the SSRC economics committee, when members found themselves without criteria to judge grant applications and renewals. Almost invariably once committee members looked at the models, they found themselves backing them all to pieces. But they could hardly refuse a renewal, perhaps destroying a leading member of the Gang that had been backed for years. And what about newcomers? In the end renewals were invariably accepted. One example of the committee's problem is shown by their funding of the NIESR. In 1978 the committee cut 10 per cent off the NIESR programme grant and refused for the first time a £5,000 development grant to be used to bridge existing and new projects. But in 1980 it gave the NIESR its programme grant application in full, ignoring the earlier penalty.

The review committee was set up with representatives from most major interest groups, such as the Government, the Bank of England, the Treasury, the City and higher education. As Mr Posner says: "We could not carry on in such a piecemeal way. All the ingredients are now in the pot."

There are two ways to look at model construction: a team can start with individual building blocks and construct a model; or begin with some *a priori* grand design and search for the right blocks. There is a story for example that the CEPG under Wynne Godley operates as a collection of facts in search of a theory, but Patrick Minford's group at Liverpool University, a new entrant to the SSRC clubhouse operates as a theory in search of facts. The committee will need to look at both sides of model building—the method of construction, and the results and use of the final model.

First the construction and two wholly academic criteria macroeconomic groups ought to meet. The SSRC, the keeper of the public purse-strings, wants to fund research at the "frontiers of knowledge". This might work against the NIESR, established, worthy, unrivalled in the 1950s and 1960s, but described as "arthritic" at times even in favour of the CEPG, described as often wrong but the most exciting new forces of the 1970s. Secondly, models must attempt to "explain," how the economy really works. Here the NIESR, which issues a quarterly bulletin, detailing efforts of different policy options, scores highly. The CEGP does less well with a highly confusing model.

Then the results. First, groups must deliver the goods it promises. This inevitably means having a proven forecaster on the team such as Alan Budd at the LBS, or Frank Blackaby at NIESR. Secondly, the use made of the forecast and model. This need not be a crude test of the size of the subscription list but clearly the CGM group under Sir Richard Stone scores highly, widely used by Government and industry; Patrick Minford's work has less obvious use. The Treasury indeed made overtures to take over the CGM, but the team rather valued complete independence higher than secure funds for acting like a support service.

Thirdly, there is the balance of funding a team receives from public and commercial sources. Thus the LBS receives £5,000 from each of 12 important subscribers; the CGM receives 40 per cent of total funds from commercial sources; the NIESR receives nothing. The independence of a modelling team is valued highly by the SSRC—this model is a public good, open to universal scrutiny and testing. A commercial model, for example Phillips and Drew, can have an excellent track record, but it is hidden and so suspect; some commercial modellers are suspected of simply reconstructing existing models. On the other hand the SSRC wants to encourage the market, the more private capital in the field the better. It is also true that modellers who rely only on commercial funds are in a sense being tested in the market place, surviving on proven results. The French are developing an exciting joint project known as Modulèko.

The fourth, most important test, is accuracy. There is general agreement that the level of testing of the modelling teams is abysmally low. *The Times* provides a very useful regular comparison in its Business News pages of how the modellers square to reality. The NIESR with impeccable timing print an article on testing including an analysis of its own errors in next month's quarterly bulletin. But as Dr Jeremy Bray, Labour MP and member of the Treasury Select Committee, says: "We must develop proper standards in quality control." Dr Bray believes one major problem is the slow introduction of sophisticated software in Britain. Modelling no longer requires huge backup teams, he says; a model can be devised as a PhD thesis in America.

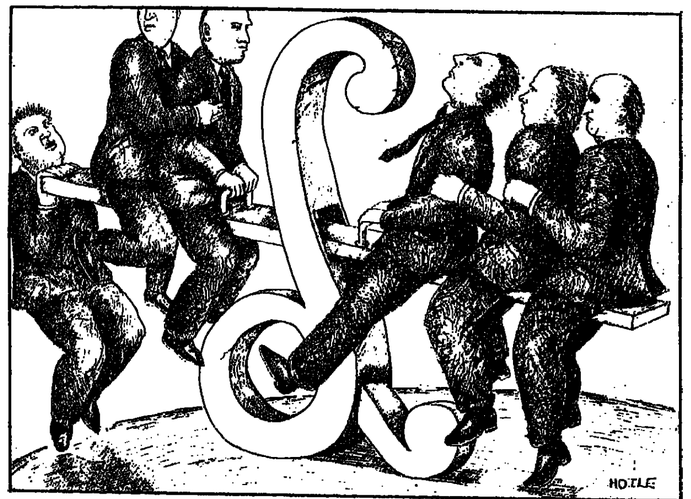
A final test somewhat played down by Mr Posner, who probably wrote the last really significant comparison of the models in the early 1970s, is by reference to the overall balance of work in the whole field. It is suggested important decisions to cut or withdraw grants cannot be made on academic grounds alone. If an important Keynesian or monetarist group dies, the balance of debate could be upset. This game is fraught with difficulties and politics. A cynic therefore might suggest that support for Patrick Minford, currently embroiled in an important debate in the pages of the *New Statesman*, may have come from the SSRC to extend the balance on the monetarist side of the fence. To undermine the NIESR in any way could seriously weaken the Keynesian troops.

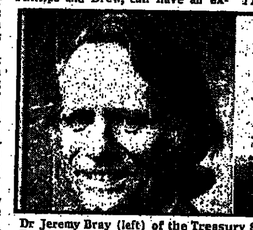
What will the committee recommend? Just to list all or most of the above criteria will not be enough—it must be weighted accordingly and flushed out with product specification: what part does pay play, how many equations should a model have, what time scale is appropriate? The committee must come out in October with two sets of clear rules or to decide if existing groups should continue to receive funds and on how new applicants can prove themselves. All talk of cutting out this or that group is clearly premature. But simply having a long record will not be enough to secure continued membership of the SSRC club. The nature of the work precludes solutions such as handing out smaller grants to more groups. So there must be a stiff entry test, then the promise of secure funding for a few years, and to withdrawal if groups start to slide.

Who could be knocking on the SSRC door after 1983 when the committee's recommendations will come into play. One conspicuous absentee has been Oxford represented on the field only by the Institute of Economics and Statistics, long past its heyday in the 1940s and early 1950s, and the Nuffield school.

Any change with the appointment now of David Hendry, Britain's current answer to Lawrence Klein, the Godfather of the UK consumption function, to fill the vacant economics chair, based in face at Nuffield. He could as a proven econometrician become a focus for an Oxford modelling team.

Other new applicants will be the London School of Economics currently building up a sophisticated econometric programme, and Birkbeck already the recipient of a large SSRC programme grant to examine quantative macro-economic testing. There is great if exciting potential bubbling underneath.





Dr Jeremy Bray (left) of the Treasury Select Committee and Mr Michael Posner (right), chairman of the SSRC review committee.

Gang of four

National Institute of Economic and Social Research: NIESR; Frank Blackaby, editor. Set up 1938; unrivalled in 1950s and 1960s, defender of post-war Keynesianism, based on income/expenditure model. Produces quarterly bulletin. Team: David Worswick, (director), Frank Blackaby, George Ray, S. J. Prais, David Mayes. Funds from SSRC since 1966. Grant of £205,154 October, 1978 to September, 1983; To become one of five SSRC designated research centres.

Cambridge Economic Policy Group (CEPG): New Cambridge school set up 1971, based at university applied economics department. Neo-Keynesian, requiring import controls to keep down built-in inflation factors. Team: Wynne Godley, Francis Cripps. SSRC funds £240,325 June, 1979 to June, 1983; plus other project grants.

Cambridge Growth Model (CGM): Input-output, disaggregated model, developed over last 15 years. Most detailed "dynamic" model, 3,000 equations, covering 40 key industries. Much used by Treasury and industry. Rumours during 1978 that Treasury would take it over but withdrew direct funding 1979. Team: Sir Richard Stone, Terry Barker. SSRC funds: £168,405 January, 1980 to December, 1982 (60 per cent); rest from subscribers to Cambridge Econometrics Company, model user.

London Graduate School of Business Studies (LBS): International monetarist, financial variables key factors influencing economy, exchange rates. Kennes Chapter of current Government, former member Terry Burns, now chief adviser to Treasury. Derived from Keynes and work done by Lawrence Klein. Model Building Unit, led by Jim Ball. SSRC funds: £296,614 Sept 1978-Aug 1983. Forecasting centre led by Alan Budd, issues from 12 key subscribers, paying £5,000 each.

New members

Liverpool Econometric Project (LEP): Rational expectations model, people adjust their behaviour as they learn from mistakes, based on work done by Muth. Newest member of SSRC club, unkindly described as "a theory in search of facts". Team: Patrick Minford. SSRC funds: £68,909 Oct 1979- Sept 1982.

Birkbeck Economics Project (BEP): Quantative study of Keynesian macromodel. Team: Richard Portes, and John Muellbauer. SSRC funds: £200,098 Oct 1979 Sept 1982.

London School of Economics (LSE): Programme on economic modelling. Team: Denis Sargan and David Hendry. SSRC funds: £185,431 Oct 1979- Sept 1982.

Treasury Model: Derived from classical Keynesian roots in 1930s but monetary knobs added in the last five years. Most sophisticated forecasting model, 800 equations. Since 1975 Industry Act forced to publish two forecasts a year.

Modulèko: New forecasting project being developed in France jointly by the finance ministry, Bank of France, INSEE forecasting team, and consortium of companies.

Phillips and Drew: Leading commercial forecasters. Keynesian model based on demand. Uses 200 equations, producing monthly reports of two year projections for stockbroking clients. Model is not published. Set up 1974, good record of accuracy. Main city rivals Liverpool, James Capel and Laing and Cruickshank.

SSRC Macro-economic research committee: *Terms*: to examine scale and terms of funding of modelling and forecasting groups, public and private sources; to decide criteria for comparisons; possibly to make recommendations on total funding levels after 1983. *Members*: M. V. Posner (chairman); A. B. Atkinson (LSE); W. Brasy (London School of Hygiene and Tropical Medicine); T. Byatt (Treasury); G. Clayton (Sheffield University); M. J. D. Cole (Department of Environment); J. C. R. Dow (Bank of England); R. C. O. Matthews (Clare, Cambridge); G. E. Mizon (Southampton University); A. D. Roy (DSS); J. R. Sargent (Midland Bank); P. J. Sloane (Paisley College of Technology).

Showdown for the West Bank's fledgling system

Susannah Tarbush looks at the problems facing the Palestinians' universities in occupied territory

The recent violent street battles in the West Bank in which Israeli troops shot six and wounded unarmed Palestinian student demonstrators received considerable attention in the world's press. Most of this attention has been focused on the student protests themselves and the events that triggered them, in particular the closure by the Israeli occupation authorities for a week in mid-November of Bir Zeit University for trying to hold a "Palestine Week", and the deportation of two West Bank mayors on December 5.

The West Bank universities have been looked at mainly in their role as "hotbeds" of student dissent and revolution. Little attention has been paid to them in the wider context of West Bank society, and even less to their role in the higher education of the Palestinians as a whole.

The West Bank contains some 688,000 (17.2 per cent) of the total worldwide Palestinian population of about four million, according to a recent study carried out by the demographer Janet Abu-Lughod. Another 404,000 (10.1 per cent) live in Gaza: in other words the occupied territories contain rather more than a quarter of all Palestinians. Another 623,000 (15.6 per cent) live in Israel, and have Israeli nationality.

The rest are scattered throughout the Arab world and beyond, 1,000,000 (25 per cent) in Jordan, 330,000 (8.25 per cent) in Lebanon, 210,000 (5.25 per cent) in Syria, 250,000 (6.25 per cent) in Kuwait, 180,000 (4.5 per cent) in Saudi Arabia, 155,000 (3.9 per cent) in other Arab states, and 160,000 (4 per cent) elsewhere, including Europe and North America.

Increasingly, Palestinian educationists and academics have been trying to get to grips with the problems of higher education of this fragmented population, and to create a higher education system to cater for the Palestinians in different areas. This is part of the Palestinians' growing efforts to plan and manage their own affairs.

Although the Western media tends to be interested only in the military aspects of the PLO, the organization has in fact developed a complex administrative structure since its creation in 1964 and has departments concerned with many facets of economic and social life. Many of the members of the 15-man PLO executive committee head departments such as information and culture, social affairs, the Palestine National Fund, and higher education.

Higher education might seem the least of the Palestinians' worries, particularly as it is one field in which they have achieved outstanding success since 1948. The Palestinian manpower expert Anthony Zahlan estimates that in 1975, about 70,000 of the 952,000-strong Palestinian labour force were either graduates or high-level manpower.

Palestinians constituted 10 per cent of Arab high level manpower, a figure out of all proportion to their relatively small numbers. A major factor in Palestinians' educational success is their strong motivation after the mass exodus from their homeland. Parents are ambitious for their children, and it is a common sight to see boys with their noses buried in books poring by the perimeter of refugee camps in the evenings, particularly before exams, trying to revise in peace away from the cramped conditions of their families.

It is also common for Palestinians working for example in the Arab oil states to make considerable sacrifices to see their brothers or nephews through college.

Another factor that helped the Palestinian spirit of higher education was the willingness of Arab governments, particularly in Egypt, to admit Palestinians and charge no fees or only nominal fees.

In a sense, the Palestinians were "lucky" that their uprooting coincided with the beginning of rapid economic growth in the Arab world, particularly in those states whose oil industries started to bring undreamed of wealth. The Palestinians played a vital role in developing Arab economies, and providing many of the necessary teachers, administrators and financial experts. Any Westerner who has had dealings with the Arab world cannot help but notice the large number of Palestinians working in banking, business and the professions.

Given this impressive track record during the past 30 years, why are Palestinian planners suddenly viewing the higher education of Palestinians with concern? One reason is that things in the Arab world are rapidly changing and the employment prospects for Palestinians look less rosy than they did a few years ago. The oil states are less prominent in developing their own manpower resources as one of their top priorities, and have channelled huge sums into school and university education. They are understandably keen to fill administrative positions in state institutions with their own nationals. Many of the lucrative contracts awarded to foreign companies include a programme to train nationals.

The Bahrain newspapers frequently carry the latest score of the "Bahrainization" programme among the personnel at the Arab Shipbuilding and Repair Yard, or proudly record the promotion of Bahrainis to managerial positions in banking. Saudi Arabia's recently announced new five-year plans lays great emphasis on increasing the Saudi workforce by 146,000 while limiting the increase in the expatriate workforce to a maximum of 9,000. Of course the effects of the intensive educational programmes on employment patterns will not appear overnight, but within a few years the subtle shifts will have grown into a pronounced trend.

As employment prospects shrink, the number of Palestinian school leavers will rocket in the next decade. Palestinians have one of the world's highest birthrates, partly as a survival mechanism. Janet Abu-Lughod calculates that of the total 4,000,000 Palestinians, between 1,960,000 and 1,976,000 are less than 15 years old. The feasibility study recently completed for Palestine Open University estimated that while about 40,000 Palestinians completed secondary school in 1979, 70,000 will do so in 1985.

While the number of Palestinians wanting a university education increases, the Arab universities will be under intensified pressure from their countries' own swelling populations. Not surprisingly, they will give priority to their own nationals, and even some Palestinians do manage to gain acceptance, their choice of subject is likely to be limited by competition, and it will be particularly hard to study medicine and engineering, subjects at which Palestinians have traditionally excelled. Palestinians already find it harder to get access to higher education than the superficial impression of their educational success rate would suggest, with refugee camp dwellers and girls experiencing particular difficulty.

The concern over Palestinian higher education is not just about maintaining student numbers, the difficulty of gaining admittance and worsening employment prospects, however. The content of education is also a source of growing dissatisfaction. As Dr Ibrahim Abu-Lughod has noted, the Palestine Open University feasibility study team says: "The Palestinians in higher education have been educated in accordance with a curriculum over which Palestinians have absolutely no control. Since these curricula have been designed by the national authorities of various countries, they have been designed, if they were designed at all, in the light of the needs of those societies".

(It is significant that Abu-Lughod should use the words "if they were designed at all", for a growing body of criticism within the Arab world says that despite the funds being pumped into Arab universities, they are failing to define, let alone meet, the economic and cultural needs of the area).

Abu-Lughod complains that "The curricula in all these countries have nothing to do with the identity of the Palestinian, with his heritage, with his future aspirations. They are not designed to serve the needs of Palestinian society, they are not informed by Palestinian heritage and culture".

This brings us to the crux not just of the question of the Palestinians' higher education, but of their efforts as a people trying to assert their rights to self-determination as recognized in the series of resolutions adopted by the United Nation General Assembly in the past 11 years.

How are the needs of "Palestinian society" to be defined? Are they the needs of Palestinian society as it exists now, the needs of a future Palestinian society that will hopefully inhabit a Palestinian state, or both? What type of curriculum will help meet the Palestinians' aspirations and his society's needs, and what type of educational institutions will be most effective?

Seen in the context of Palestinian higher education as a whole, the West Bank universities are not just centres of violent student opposition to the Israeli occupation. They represent a new experiment in Palestinian higher education, as the first universities being run by Palestinians for Palestinians.

It is not always realized quite how new this experiment is. Bir Zeit, which started as a small private school in 1924, evolved first into a secondary school and then into a college, adding a freshmen class in 1953 and a sophomore class in 1961. As a junior college, it prepared students to complete their studies in the Arab world or beyond, often at the American University of Beirut with which it had a tie-up.

It was only after the occupation effectively sealed the West Bank off from the Arab world in 1967 that pressure mounted to upgrade Bir Zeit to full university status. Students who left the West Bank in pursuit of higher education faced great difficulties on trying to return home, with lengthy interrogations and often imprisonment from the occupation authorities, particularly if they had been studying in Beirut.

By having lived in Beirut, the centre of the Palestinian resistance movement, they were open to charges of belonging to illegal organizations and could be imprisoned. In addition, students abroad risked losing their rights of residence in the West Bank.

Faced with such pressures, many students never returned to the West Bank, and in an effort to stem the flow of youth from the area Bir Zeit added a third (junior) class in 1974-75, and a fourth (senior) class in 1974-75. Its first graduation ceremony was held on July 11, 1976.

The other universities were also established: Bethlehem University, which is owned by the Vatican, in 1973 and Al-Najah National University in 1977. Al-Najah was until then a teachers' training college.

From these beginnings, the university system has grown rapidly, and both Bir Zeit and Al-Najah have ambitious development programmes. Bir Zeit, which had a total of 900 students in 1977-78 aims to have 4,500 in 1986-87. Al-Najah plans even more rapid growth, from 1,405 students in 1978-79 to 7,225 by 1986-87 and 9,220 by 1989-90. Bethlehem's numbers are likely to remain at around 1,000.

The growth of a sizable student body in the West Bank vigorously opposing the occupation and any attempt to impose the Camp David agreements clearly alarms the Israelis, as shown by the recent harsh action against student demonstrators. The recent moves against the universities are only the latest of a series of problems experienced by the universities as a result of operating under occupation.

The problems include the "invasion" of campuses by the military, closures (Bir Zeit was closed down for months in 1979), the refusal of the military authorities to allow the entry of certain Arabic books and periodicals despite the fact that they are available to students at the Hebrew University in Jerusalem, and difficulties over obtaining work permits for foreign members of faculty.

Although these problems created headaches for university administrators, they did not affect the university's basic freedom. Order No 854 issued by the West Bank military governor in July was thus particularly ominous, as it was aimed at curbing student activism, enabling the occupation authorities to interfere to an unprecedented extent. It stipulated that universities must be licensed, implying that the licence could be withdrawn.

It also said that the names of all faculty members and students must be approved by the occupation authorities, in order to "weed out" those who had been committed for security offences or held for questioning, and "anybody who has visited the West Bank knows, almost every Palestinian West Bank family has members who fall into this category. All courses of study are subject to the approval of the military governor against an entirely new kind of restriction. University students say that in recent weeks their notebooks have been seized and scrutinized by the occupation authorities.

The universities have refused to comply with the new decree, which aims to "undermine the university's status its independence, its legitimate functions and its academic freedom" as a statement issued by Bir Zeit said. The statement pointed out that the decree, by amending the Jordanian law of education and Culture of 1964, contravened the fourth Geneva convention of 1949 which stipulates that an occupying power does not have the right to introduce changes in the laws of the country under occupation.

This although the recent violence on the West Bank might have been triggered by specific events, it is part of an inevitable showdown between an increasingly defiant and powerful student body, and an occupying power which wants to nip the fledgling West Bank university system in the bud before it can develop and gain further momentum.

Operating under occupation has also caused the universities other less obvious, but potentially very serious, difficulties, particularly in planning. In the absence of a national government and ministry of education, how are the universities to be coordinated? The universities are all private, and funded largely from external sources, with for example Al-Najah reportedly receiving considerable aid from the oil states.

Two families' names are virtually synonymous with those of two of the universities, that of Nasir with Bir Zeit, and that of Al-Masri with Al-Najah. These families have played a crucial role in founding, administering and securing funding for their respective universities. When does rivalry between the universities cease to be healthy and become detrimental to the university system as a whole?

In an effort to try to coordinate the higher educational institutions which apart from the universities include teacher training and vocational colleges, the Council for Higher Education was set up in 1977, grouping mayors, representatives of the professional associations and academic institutions and West Bank personalities.

In 1979 the council invited Professor Norman Hunt of the University of Edinburgh's department of business studies to the West Bank with the brief of appraising higher education and making proposals for the rationalization and future development of the three universities and other tertiary institutions.

Hunt's report was highly critical of the way the university sector was developing. He warned that if 4,000 students who scored 70 per cent or more in the general secondary school examination. The university tertiary sector would have a severe shortfall of places with perhaps 3,000 places to meet demand of between 6,000 and 8,000.

He said the imbalance would be more serious still if the Islamic High School in Gaza, which declared itself a university, was ahead with its $75m development plan, and if the Arab-Jordanian Institute in Jerusalem also fulfilled its aspirations to university status.

The imbalance between the university and non-university sector is particularly serious in the West Bank context. West Bank educationalists and planners want to reduce the flow of students and qualified people from the West Bank, and to make the best use of their talents within the area.

If higher education continues in its present course however, there is a danger that a large proportion of graduates who cannot find employment in the West Bank will be created, and many will leave the area in search of work. This will at the same time fail to meet the training for the technical and other skills the Palestinians desperately need.

The question of defining the needs of West Bank society and trying to develop the higher education system to fit those needs is similar to the challenge facing the PLO's higher educationalists who are trying to devise a system that will meet the needs of the whole Palestinian people.

If the problem on the West Bank is difficult enough it is immensely difficult outside, with a population scattered in many countries and even from the territory that may become a Palestinian state.

The Palestinian Open University feasibility study recently completed by Professor Ibrahim Abu-Lughod has gone a long way to trying to define the needs of the Palestinian society. It has designed a highly flexible system of higher education that could overcome the problem of the Palestinians' geographical dispersal, and cater for those forced to work by family and family responsibilities to study at the same time.

The open university would help solve the problem of large numbers of Palestinians seeking university education that is tending to worsen in the next few years. It is intended that the open university will have an eventual student population of 45,000.

It seems certain that the pressure for increased planning in Palestinian higher education will continue, and that the days when Palestinians grabbed higher education anyway they could in a somewhat haphazard way are coming to an end.

Israelis on guard outside Bethlehem University.

Every chance of recovery

Higher education traditionally has been associated in the public mind with academic scholarship and the training of elite professions like doctors and lawyers. This week we begin a series of articles looking at the many other groups—such as journalists, social workers and musicians—whose training is becoming an ever bigger part of university and college life. Here DAVID JOBBINS discusses new developments in the training of nurses.

Degree-level training for nurses is steadily winning acceptance from a traditionalist and often sceptical profession.

Over-rapid expansion—a temptation particularly for those public sector institutions with surplus teaching capacity and a desperate need of students in the period following the contraction of teacher education—has been scrupulously avoided.

There are now about 20 degree courses in the United Kingdom which lead to entry to the State Register. Twenty years ago there was only one.

The wisdom of a cautious approach has been vindicated by signs of a levelling off in demand from highly qualified and well-motivated students.

Numerically, the impact of graduate nurses has been small. Eight years ago the Briggs Committee on Nursing predicted that graduate entrants would be a small but increasing proportion of the profession—between 2 and 5 per cent.

In 1971 degree students made up only 0.2 per cent of general nurses beginning their training that year. By 1975 the figure had risen to 0.9 per cent in line with the expansion of courses.

But in 1979, the latest year for which figures are available, it had barely crept to 1 per cent.

There were two forces behind the moves to develop degrees—one overt and the other only tacitly admitted. The formal reason was that the role of nurses in patient care is changing. More responsibilities formerly within the clinical province of doctors are being devolved, and new technologies make a greater demand on nurses.

Pragmatically, there was concern that well-qualified potential recruits were being put off by the absence of a vocational degree which could form a starting-point for a career.

There are now two broad types of degree course, both with 3,000 hours of clinical practice. Chronologically the first group is the sandwich type where there is a normal degree course with a content relevant to nursing, for example, social science. The effect is to shorten the SRN training course, which students take on completion of the academic part of their degree, although they will have done some vocational work during their degree studies.

The second group, increasingly favoured by the authorities, is a specifically designed nursing degree, in which theory and practice are far more closely integrated, and all subjects studied have direct relevance to the profession.

The evidence suggests that this trend is correct, for there are signs that integrated courses are more successful in terms of completion rates. The value of the sandwich alternative is for students not entirely certain of their career intentions.

In 1971 entrants to sandwich and integrated courses were small in number but evenly balanced, 17 opting for the former and 16 for the latter. By 1975 integrated courses were well in the lead, with 104 entrants against 59. The trend continued in 1979, with integrated course students increasing to 190 against a fall in sandwich students to 48.

Degree courses remain only a minority method of entry to the profession. Most train at one of the 200 training schools linked with hospitals and scattered around the country. There are two schemes: three years for a State Registered Nurse and two years for State Enrolled Nurse.

The basic entry requirement for training as an SRN is two O levels, but many schools set their own standards, some being able to ask for a minimum of five.

For the SEN no formal entry qualification is demanded, and schools set their own standard and method of assessment. While the SRN is the career grade, the SEN is essentially a practical training with limited opportunities for promotion within the profession.

The framework of nursing education is enshrined in statute law, and it was the 1951 Nurses Act which relaxed the law to allow the General Nursing Council to embark on experiments and opened the door for the later development of degree courses.

It was not until the late 1950s that the GNC became involved in a serious appraisal of the possibility of introducing degree courses. This development implied the construction from scratch of a body of academic knowledge around the traditional patchwork of almost random skills which had to that point been the meat of training.

"Among the profession itself there were doubts, which have not yet entirely been resolved, to what extent nursing has an academic content," Miss Rosemary Briggs, the GNC's education officer, said.

The GNC's first feelers went out to London University, and discussions were held about drawing together relevant courses from other areas of study into a cohesive degree.

"This is what academics find difficult. But you do not want a whole biology course, for example; you just want the bits relevant to the care of patients and training of nurses," Miss Briggs said.

In the end the talks with London proved abortive. "They had their own form ideas about what constitutes a degree subject, to such an extent that it looked as if the students would get no nursing training at all!"

In the event it was Scotland which showed the way with the first full degree course in nursing introduced at Edinburgh University in 1960.

England and Wales had to wait until 1966 for the first intake to its pioneer degree course. Following the failure to find common ground with London University, what was needed as an institution with a sound academic base allied to an experimental outlook and a recognition of the importance of vocational training.

This emerged in the shape of the new University of Surrey, then in the midst of its transition from a college of advanced technology at Battersea to its new site at Guildford.

Largely initiated by Dame Muriel Powell, a pioneer in many aspects of nursing, it was a totally new course developed in association with St George's Hospital. A BSc in human biology, it shared the sandwich structure of many of the early courses, and was suitable for other workers in the health field although a number of places were reserved for student nurses. Its initial intake was seven students.

The Surrey experiment ran into problems as communications between Guildford and St George's grew increasingly difficult. These became so apparent that the course ceased to run, with its last intake in 1975.

In illustration of the trend away from the sandwich structure towards degrees in nursing Surrey now operates an integrated course in association with the Guildford School of Nursing, while St George's runs a similar one with Chelsea College—evidence that London University's early reservations have been overcome.

When those early talks with London ran into trouble a course leading to a diploma in community medicine was developed at Manchester University in association with the city's hospitals. This proved so successful in providing a suitable entry to nursing for educationally better-qualified applicants that it was eventually converted into a degree course.

In 1974 the university appointed its first professor of nursing, Miss Jean (now Baroness) McFarlane. Manchester remains the largest centre for degree work, with about 30 students a year graduating.

The growth in extra places called for by the committee headed by Professor Briggs coincided with the appearance of the polytechnics, and it was natural that they should be considered to play a part in the task.

Their philosophy of vocational training was theoretically well matched to the task but again the conservatism of some sections of the profession became evident.

"There was a division of opinion whether this was a good thing, whether or not we were lowering the status of the degrees by going into the polytechnics", Miss Briggs said. "But I think they are good courses."

First off the mark was South Bank Polytechnic in London, which launched it BSc in nursing studies in 1973, followed by Leeds Polytechnic in 1974.

The Leeds course, linked with the city's St James' Hospital nursing school, ran for six years before being redesigned.

The problem with the Leeds course—and others—was that it had been designed by academics without nursing backgrounds, and it lacked a true nursing core. In its redesigned form, now in its first year, it includes a more solid theoretical framework.

Despite this apparent shortcoming graduates from Leeds are heavily in demand and there are few problems of integration into the profession.

Newcastle Polytechnic used to run a course but this ceased because of difficulties in finding a suitable course leader. This problem has also held up the opening of two new courses—at Bristol Polytechnic and at Southampton University.

"This has been one of the inhibiting factors in the expansion of courses", Miss Briggs said. Bristol and Southampton had been trying for a year to appoint a suitable person, and had only just succeeded, making starts before 1982 unlikely.

The involvement of the polytechnics has introduced a third partner into the process of course validation—the Council for National Academic Awards. It is instructive to compare the large volume in which Sheffield Polytechnic made its submission to the CNAA which the much slimmer documents demanded of universities.

Next week: Ngaio Crequer on sport in higher education.

The 'unholy muddle' of regional teacher co-ordination

There are fears, too, that in some cases i.e.a.s are creating committees which do not adhere to the one-third principle of representation which applied to the ATOs, and that should a new national body have ensuing regional machinery, these would be absorbed unchanged.

Yet there is little doubt that these committees are fulfilling an important function in the current climate providing at the very least a forum for discussion on teacher education matters.

The latest and most unusual group in the region is the East Midlands Regional Consultative Group which met for the first time in October 1980 after the region's *ad hoc* steering committee had withered away. Its membership is almost identical to the latter but it has the distinct advantage of having no allegiance either to central or local government or any other vested interests.

Therefore, although the universities of Nottingham, Leicester and Loughborough have acted as midwives to the group, they have no more powers than the other represented on the committee such as teacher training institutions, local education authorities, the Council for National Academic Awards and the National Association for Teachers in Further and Higher Education.

Professor Maurice Craft of Nottingham University, chairman of the group, says the body is non-statutory, with no powers, politically neutral and designed solely to promote the exchange of information on teacher training matters in the region.

He says that apart from improving communications within the region, probably the most important aspect of the group is that it offers a vertical channel of communication between the teaching profession and the DES which is unfettered by loyalties.

Professor Craft also believes that at a time when further rationalization of teacher education is being discussed, it is vital for interested parties in the region to sort out their priorities before the Government steps in.

So I do think this is a possible model for other regions because it offers freedom of speech and has no hierarchy. However, I don't envisage the group becoming a permanent body, it would then need to be serviced and require funding. What is vital is a central Government initiative in this area", he said.

TEAC, which services London and the Home Counties is in many ways the first of the regional bodies in teacher education. Ironically, since the committee comes to an end next year, it is a model being considered or being taken up by other regions.

Originally the committee was formed during the second wave of teacher training rationalization to coordinate teacher training. It was sponsored by a group based at the London Institute of Education and Sussex University, together with the London Regional Advisory Council and the CNAA.

It operates through two sub-committees on trial and in-service teacher training. Mr Derek Stubbs, a member of the committee, points out that the latter has considered something like 300 proposals for new courses since it was established.

"Unfortunately this tremendous volume of work seems rather wasted considering the Government now says it is unable to fund any expansion of in-service because of the economic situation," he says.

Apart from that, the committee has been considering recommendations made by the Advisory Committee on the Supply and Education of Teachers as well as matters such as the DES rationalization programme as well as what needs to be done in teacher training with reference to both the Warnock Report and the Toyne proposals on credit transfer.

It is not only at regional level that sudden activity is emerging. This week the first meeting of a national standing committee for teacher education in the public sector took place only a few months after the long-awaited reconstitution of ACSET.

In a background paper on the committee, Mr Malcolm Lee, vice-president of Natfhe (which has played a key role in setting up the committee), points out that the time has come for a national initiative independent of Government and not entirely concerned with questions of numbers and supply.

"The demise of ACSET and the crucial interregnum before the Secretary of State reconstituted ACSET identified the inadequacy of a national body which could be called into being or dismissed at will", he says.

The new committee with its representatives from the College principals associations, Natfhe, the main teacher unions, as well as the Committee of Directors of Polytechnics and the Polytechnic Council for the Education of Teachers is the first step towards the long-hoped for Joint Council for the Education of Teachers.

Initially, its main aim will be to provide a national forum for discussion on the quality of teacher education in the public sector, but it is hoped that later a joint approach can be developed with the University Council for the Education of Teachers.

But what about the other two committees, UCET, probably one of the oldest still existing national committees in teacher education for universities, and PCET, a later but equivalent development for the polytechnics.

UCET was formally constituted in the heydays of the 1960s through an amalgamation of the Conferences of Institutes Directors and the Conference of Heads of University Departments which it was felt should be brought together in a permanent secretariat as a result of the major expansion in teacher education.

The council operates through a structure of committees, is recognized by and has regular meetings with the DES. Its main concern over the years has been common to other sectors, such as the shortage of specialists teachers, the new maths and English requirements, and the position of the PGCE versus the BEd.

UCET says that its most important function is to promote and protect the interests of teacher education in universities. At a time when the sector is threatened everywhere, it needs to be eminently flexible to take immediate action. The most definite items on its agenda for the future are PGCE numbers, position of overseas students, part-time fees, the position of advanced courses, and the overall question of regional machinery.

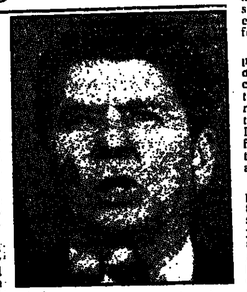
PCET serves a very similar function. It is composed of representatives of all polytechnics. Its establishment in 1976 after the merger of many colleges with polytechnics arose from the realization that the interests of polytechnic teacher education units were very different from that of the remaining unscathed colleges.

PCET like other teacher education bodies, is also concerned that the bad image of teacher education caused by unemployment among teachers should be removed. It is anxious that the schools should be made more aware that rationalization has led to a reduced teacher profession with higher qualifications and therefore greater opportunities for employment both in teaching and other fields.

Patricia Santinelli

Is the presidency big enough?

Richard Rose asks if the office Ronald Reagan has just taken on is up to the task of governing the largest nation in the western world



Reagan: keystone of American government.

Most White House watchers spent Inauguration Day wondering whether Ronald Reagan was big enough for the presidency. But the more important question is whether the institution of the presidency is up to the task of governing the largest nation in the Western world. The answer should concern Europeans as well as Americans, for the United States exports its failures as well as its successes.

Today, James Reston of the *New York Times* can describe Washington as "a troubled city" because of "structural defects in our government". A blue-ribbon Commission of the National Academy of Public Administration advises President Reagan that the nation faces "a crisis of public management", and questions whether Americans have the capacity to govern themselves. The theme of the third edition of Richard Neustadt's classic book, *Presidential Power*, is presidential weakness. Neustadt concludes with the anxious question: "Is the Presidency possible?"

It is inverted snobbery for Americans to claim that it is the worst governed country in the world, just as it is chauvinistic to claim that the United States is the best governed. But even neurotics can have real cause for anxiety. The underlying cause of the anxiety is simply stated: can the United States compete in an increasingly threatening world? When nation competes with nation, government must be the nation's authoritative spokesman. Multi-national corporations can do many things, but Americans do not trust them to look after the nation as well as self-interest.

The presidency is doubly crucial when big decisions must be made about America's place in the world. No other official is elected by the whole of the country. Internationally other heads of government want to deal with the president, because they believe he is the man in charge in Washington. If nobody is in charge of the ship of state, then America's policy is without direction, and vulnerable to those who can profit from its drift.

When Margaret Thatcher, Giscard d'Estaing or Helmut Schmidt deals with the president, he or she speaks with the full authority of a nation's government. In each of these European countries, the Cabinet as a whole is committed to major policies of government; any objectors must resign or risk dismissal. Party discipline also assures legislative support by Parliament. Senior civil servants can put their expertise to work because they know the people and policies they are meant to serve: Europe's governors are the heirs of a political tradition emphasizing the authority of government.

By contrast, the United States began as a "governmentless" agglomeration of people. Today, President Reagan is only head of one among 78,268 separate jurisdictions of government within the more or less United States. The Constitution institutionalizes what is described as a system of checks and balances. The checks are easy to see—especially from the Oval Office of the White House.

America is run on the basis of government by sub-governments. Each sub-government—uniting interests dispersed institutionally throughout the federal system—is concerned with a limited area of policy. These sub-governments are called iron triangles, because the trilateral agreement of Congressmen, bureaucrats and interest groups is strong enough to exclude influence by the president. If the president cannot be the balance of the constitutional system, he can only throw himself into the fray as yet another check within government.

The president is the keystone of American government, but for 20 years the arch has been weakening, reducing the weight that any president, whether a youthful John F. Kennedy or an aging Ronald Reagan, can give to government.

The decline of party means that the president cannot count on party loyalties overcoming the constitutional gulf between the legislature and the executive. The world grows, as primary elections has made it necessary for a presidential candidate to know more about country caucuses in Iowa or New Hampshire than about the State Department or the Pentagon. And the decline of the "barons", formerly in charge of Congressional committees has divided a stable feudal system into 535 petty principalities, with no Congressman strong enough to secure a Congressional view. Its Treasury approval must be specially sought. If an Act of Parliament is required, a ration of Parliamentary time must be obtained from the future legislation committee of Cabinet. Cabinet leaks are proof of the success of the Cabinet system: losers in battles there would rather grouse about their setbacks privately than launch a frontal challenge by resignation.

The concentration of powers in the Cabinet—which integrates party and civil service, executive and legislature, not to mention the Prime Minister and potential challengers—makes the job of directing British government 'do-able'. The job is not easy, and the opportunities for mistakes are great. But a person can be Prime Minister of Britain with a Downing Street staff of half a dozen because the collective authority of government is strong enough to accomplish much without any intervention from the person at the top.

A president is not at the apex of integrated institutions of government. He presides over a menagerie of sub-governments. To call the president the chief executive is a misnomer; he is a chief but not an executive, for institutionalized followers are few. A president cannot manage the United States government as a Harvard Business School graduate manages a corporation. President Reagan, unlike President Carter, appears well aware of this. Instead, a president can try to manage government like a cowboy manages a herd of horses. The object is to lasso what is needed for his purposes, while avoiding being run down in a stampede of sub-governments.

The resources that a new president brings to office are much less adequate than those of a British Prime Minister:

i) A president is self-employed and owes his primary victory to building a personal following without organized party backing. By contrast, a British Prime Minister is a team captain, chosen by the vote of the players he or she is meant to lead, and far better able to work with them.

ii) A president must be a skilled campaigner to win a host of primary contests. But campaigning in a television and jetplane era has little to do with the work of government. President Reagan, like President Carter, takes his first job in Washington at the top; he can only go down from there. By contrast, the average British Prime Minister has spent nearly a quarter-century in Parliament, and up to a decade in Cabinet before getting the top job.

iii) A president is extroverted, looking to the media and the public opinion polls for confirmation of his popular leadership, and to foreign nations (especially potential enemies) for opportunities to defend or advance the nation. In the words of one critic, a president today risks becoming "a public relations junkie". By contrast, a prime minister is introverted, looking to Cabinet colleagues, to very senior civil servants, and to Parliament—a far better source of guidance about the practicalities of getting things done.

(iv) A president institutionalizes distrust. Richard Neustadt's classic work was Machiavellian in inspiration; trust no one but yourself. When delegation is necessary, the president is likely to turn to those who are personally loyal to him, former campaign staff inexperienced in the ways of Washington or the substance of politics. The result can be Watergate. By contrast, a British Cabinet institutionalizes trust in the experts; wherever their faults, civil servants have the virtue of knowing Whitehall only too well.

A newly elected president appoints thousands of persons to staffing offices in the executive branch of government but they, like him, tend to have limited knowledge of government. Knowing bureaucrats are increasingly being relegated to the far ends of the corridor of power. The result is a dissociation of expertise and electoral legitimacy. The president's team tends to be amateur—whereas those within the iron triangle are professionals. The president risks becoming apart from rather than a part of the government of the United States. In an effort to reassert authority, a president is likely to appoint more and more staff in order to bypass entrenched obstacles. But the proliferation of special assistants trying to carry out presidential mandates will inevitably generate more conflicts than the president can cope with.

The American system of sub-governments has lasted well for almost 200 years because it is good at dealing simultaneously with lots of small-scale problems. A decision to put a stoplight at an intersection or build a municipal swimming pool is a government decision, just as is a decision about building a neutron bomb. Problems of public policy come in many different sizes. Every political system requires the capacity of miniaturization—and the disaggregation of government across the United States is good for just that.

The great defence of the American system is that it is open access government, offering something for everybody—hawks and doves, spenders and budget cutters, business and labour, white racists and blacks, women's libbers and the moral majority. Open access government is the envy of British backbench MPs, inquisitive journalists, Liberals and devolutionists excluded from power by the collective authority of Cabinet.

The chief problems facing Americans today are not, however, small-scale issues suitable for decentralized sub-governments. Instead, they are big problems of foreign policy, national defence, the management of the economy and energy. Because these issues have a pervasive impact upon the whole of society—and many lesser government programmes—they are aptly described as collective concerns.

Collective problems require a collective response. If big problems are left to sub-governments to resolve, then intended policies may be decided in contradiction to domestic concerns, and energy policies in contradiction to economic policies. Insofar as this happens, American government pays a high price for making governmentally harmless, and the allies must wonder whether the United States is to be relied upon to follow any consistent policy abroad or at home.

The president is the one person in the American system of government who can claim the political right to decide between conflicting views of military advisors and diplomats; budget cutters and pump priming big spenders; or conservationists and advocates of rapidly exploiting energy resources. Although he has the political right to decide which among competing sub-governments should make national policy, the president lacks the political power to carry his views into effect.

President Carter learned the hard way that many of his decisions were little more than statements of intent; in measures short of war, a president recommends actions for others to take. President Carter did secure Congressional endorsement of his Panama Canal Treaty—but not of his SALT II agreement with Russia. The president's major energy Bill was refused passage, and conflicts between economic advisors as well as uncertainties in the White House prevented adoption of any clearly defined economic policy.

President Reagan will find that collective issues do not unite politicians in the name of the national interest; their immediate impact is to intensify divisions. Big issues typically "spill over", impacting other issues as well. What is done about tax cuts affects defence spending, and what is done about energy affects the economy and foreign policy.

America's problems today are too pressing and too public for President Reagan to pass the buck when confronted with conflicting advice, to sleep while others worry about national nightmares, or to attempt to act like a constitutional monarch. If President Reagan does not confront conflicting sub-governments, their actions will undermine his authority.

The conventional Washington prescription for the difficulties of the White House is to recommend strengthening the presidency. Few years of a peanut presidency make an authoritative, if not imperial presidency look better. But many proposals to strengthen the presidency may weaken it. To increase advisory agencies within the Executive Office will increase the number and variety of views advocated before the president, but President Reagan, like President Carter, may find this only makes decisions harder. Increasing the staff around the president diminishes his personal contact with individuals and members and increases the president's problem of controlling his staff. A ballooning staff can make, as one critic put it, in "too many people trying to bite somebody with the President's teeth".

Such is demoralization in Washington that voices are once again being raised in praise of the British system of government. Lloyd Cheiler special adviser to President Carter, is the most recent to endorse moves towards the British pattern. But the United States Constitution is not going to be amended, for the power of government rests with Congress and the states, the beneficiaries of the president's weakness. Any American who wants to be governed by a strong president is best advised to emigrate to France, rather than waste time trying to remodel the United States Constitution.

To think about strengthening the presidency is to attack the problems of Washington politics at the wrong point. A president can only be as strong as the government he heads. The first priority for American reformers is to strengthen effective authority. Reducing the fragmentation of powers in Congress, in party politics and in the executive agencies would create conditions for coalitions strong enough to face up to the nation's problems. Such changes take time. But since government has lost much ground to sub-governments in a short space of time, perhaps it could gain strength rapidly in the urgency of America's future problems provides incentive for change.

From a European perspective the weakness of the contemporary presidency may be thought of as immediate account. After all, the nation's government feels overloaded. But European leaders only know the state of the presidency. The problems that face the United States are not confined to the United States: international relations, military security, the economy and energy are now European problems. Every non-European country—and especially Britain—must deal with these problems in an international context; the international economy, military security, foreign policy and military forces of the United States has for decades played a role to play for other nations to ignore its impact.

The annual summit conferences of the heads of the United States, Britain, France, Germany, Italy, Japan, and Canada give official recognition to the interdependence of heads of government in a world today. Consultation, consultation, cooperation, conflict continue on a day-to-day basis. When European countries require American cooperation to realize mutual interests, then so much as the United States is handicapped when the leading head of government in America is unwilling or unable to exercise responsibility rather than an asset.

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'... so was born the journalist who has wasted so much of my time.' Frank Kermode continues our series on intellectual formation

Embers from Newcastle

Formation—*les années de formation*—sounds perfectly natural in French, but the English equivalent is somehow rather grand. Oddly enough, the word, in the sense that is now exercising us, is absent from the *OED2* and from the Supplement. I suppose this must be an oversight, since one hears the word used from time to time; but there is some feeling that the usage is strained, a bit posh or a bit foreign. Formation implies some pretty rigorous process of shaping, some deliberate attempt to put a person together for a particular purpose, on a particular pattern, something that happens elsewhere all right, but not very conspicuously here.

Certainly nothing of the sort happened to me, though it must of course be true that teachers have some vague notion of what it is they wish to make of the material entrusted to them, and equally true that somehow one's mind assumed a serviceable shape. It seems likely, however, that the real shaping was done before the official teachers got their chance. If we push formation back that far we shall have to admit that it is the proper study not of the literary critic brooding on his past but of the psychoanalyst. Still, it must be fairly clear that the circumstances and influences of one's extreme youth allow certain predispositions to develop at the expense of others. I was perfectly well aware that something of the sort was happening when, as a child, I recognized that there were things I couldn't hope to do because my family was relatively poor.

From 1919 to 1939, the first 20 years of my life, my father earned £3 a week, a sum he augmented by what he called "doing foreigners", or, in modern parlance, "moonlighting"; but his annual income cannot ever have exceeded £200. That was enough to pay the rent, eat decently and dress warmly. It was not enough for trips abroad, books, or a piano. The last of these lacks was the one I was most tedious about, for I was very early certain of a musical vocation. How genuine it was I can't say; I took up the clarinet, and was told I was the only performer who invariably made the instrument sound like a trumpet, so perhaps not much has been lost. Still, not being able to be a musician was part of my formation. Soon I found ways of acquiring books cheaply and founded the large nondescript library that has become, in these later days, such a domestic nuisance.

The first poet I knew anything about was T. E. Brown, formerly much respected in the Isle of Man, where the dialect poems still made sense. Fragments of these poems have been in my head since early childhood, for my mother would read or recite them, and I allude to them in passing. I doubt whether many people read them now, but I remember the large crowds at the centenary celebrations of 1930. The principal speaker was Sir Arthur Quiller-Couch, King Edward VII Professor of English Literature at Cambridge. His address was, I fear, coldly received; the Manx don't like the English (even the Cornish) to come over and tell them about their own affairs; and I doubt if the most ambitious boy in the audience envied Q his job.

Brown's school was the only public school on the Island, and the question of my going there never arose, for it was as much beyond our means as Clifton, the school where Brown taught. The local grammar school almost made the first to go comprehensive in later years) was a good one; that is, it got good results in examinations. We were beaten a good deal; there was with some masters a desire to terrorize one into knowledge, perhaps as a substitute for the more difficult method, which is to inculcate love for the subject taught. Still, it was possible to get excited about Browning and moony about Lamartine; Latin was laboriously taught throughout the school, and Greek and German were available, so that anybody determined to get himself formed as a scholar might just about do it. He would then have to win one of the three scholarships annually available to Manx children (few of whom had any money) and go to university on the mainland. The best scholarship was tied to Liverpool University, and there I went in 1937.

It may seem that I did so for the some reason that I took up the clarinet, and in a way that is true. There simply wasn't the money for anything else. But it would be quite wrong to allow the inference that I felt deprived. We knew nothing about universities anyway; it seemed an amazing bit of luck to be going to Liverpool. And so, I think, it proved. It was quite splendid enough for me, and the teaching was good, to a reasonably adventurous syllabus. I had to learn some Anglo-Saxon, willingly enough in the end, and continued Latin under no less a teacher than Mountford. It might be thought that one defect of a provincial university would be that Oxbridge could cream off the brightest students; but if that is the case now, which may in part be doubted, it was not the case in the 1930s, when, as the Franks Report informed us, the number of applicants to Oxbridge tallied pretty exactly with the number of places available to them. All the rest went somewhere else, or stayed at home and attended the local university. Later on I shall mention three people who, academically speaking, did most to form me; one of them was an undergraduate at Liverpool.

There was little use thinking of careers or even futures if you were 20 in 1939. I graduated in 1940, and embarked upon five and a half years in the Navy, properly, in the present context, to be thought of as a protracted period of deformation. It is a large claim, but I doubt if many people spent the war years in a condition of inutility more absurd than mine. All that survived of previous habits was a lust for print, often hard to come by. A friend agreed to be a sort of private book-of-the-month club, and I still have some battered relics of his taste: *Between the Acts*, *New Year Letter*, *Plant and Phantom*, D. W. Harding's *The Impulse to Dominate*. But he was a pacifist, and went to prison. For a couple of years I could go, for two days every two months, to Reykjavik, where there was little comfort except a bookshop well stocked with Everyman editions; I am reminded of it when I see my copy of *The Brothers Karamazov*, volume 2, still swollen from its ducking in an Icelandic hurricane. (I probably know more about hurricanes than all the Conrad scholars together, but they did not interest me much.) I wrote many verses, the poetry, I now see, of a corrupted mind. When Yeats complained that "conduct and work grow coarse and coarse the soul", he was not talking about our way, but I think of the words as appropriate to my deformation and to an aspect of the war years that everybody seems to have forgotten: they were base, dirty and ugly. London was so disgusting that one was astonished by the brilliant streets and buildings of New York and Sydney. It was in Sydney, as a matter of fact, that I had my sole literary experience of the war years, for I fell among poets at a time when better poetry was being written in Australia than in London.

Like many others, I found the immediate aftermath of the war, which included the ghastly heatless winter of 1946-47, depressing, especially as it was not easy to live on £4 a week even in 1946. Though I was in no shape to do so, I started work on a thesis. I daresay I should never have been formed at all if at this time three people had not intervened rather decisively and tried to do the delayed or spoilt work for me. All are prematurely dead. The first of them was Peter Ure, before the war the undergraduate I spoke of. He died in 1969, just before his fiftieth birthday, and is remembered outside his circle of friends for a handful of books and articles on Yeats and Shakespeare and the Jacobean drama. His first book on Yeats, published in 1946 though written much earlier, really inaugurated modern Yeats scholarship. I have written a memoir of some length, and will not repeat it here. Ure made a prolonged attempt to prove a poetic vocation, and then tackled scholarship with the same seriousness (not that he thought poets could manage without being scholars).

He was a classic by training, but before he came up to "read" English he had pretty well read it. He knew the English poets with an intimacy I have not seen rivalled, and assumed that all freshmen reading English had read them all, and also Racine and Dante and Joyce and Kafka and Rilke and Dostoevsky. He read incessantly, without haste and without rest, and as he read he made notes. After his sudden death James Maxwell and I could say, from the notes we found in his perfectly tidy study, what he had been reading and why; and why he had stopped. He annotated his own pain.

A solitary man and given to melancholy, Ure spent the last 22 years of his life in Newcastle, and was not much celebrated in the important south. But I think no one who did know him would deny that he was probably more fully "formed" than anyone else in the business, a scholar of exemplary seriousness whose achievement fell rather short of his great powers. It was the most marvellous luck to have him as colleague, friend, and, occasionally, rival for so long. To me, at 18, extravagantly provincial and (as I now saw) desperately ill-read, he was an image of the possibilities of living seriously with books, of undertaking to study them.

When he got out of prison Ure went to the Middle East and finished the war an important figure in UNRRA, ordering people about in his newly-acquired modern Greek, and drinking gin, he said, with generals who cannot have known he was a conscientious objector. This experience of power did not make postwar Liverpool, when he got back, any less depressing; but his return was a blessing to me. I was, since I had to embark on something, embarking on an edition of Abraham Cowley, under the eye of L. C. Martin, whose long-term plan was an O.E.T. edition like his own Vaughan and Crashaw. However, I found that the only poem of Cowley's in which I could maintain anything like the degree of interest necessary to the project of living with him for several years was the *Davideis*; and of the *Davideis* the only parts that really held my attention were Cowley's notes. At this point Martin very properly decided to shed me. He transferred me to Donald Gordon, then about 30 and, I think, an assistant lecturer.

Anybody who knew Gordon in his prime will at once understand why I shall not be able, in the space of this article, to give the reader any idea of what he, the second of my talented formers, was like. He was at the time of our meeting working on that series of articles on the Stuart masques which are now admired as virtuoso examples of a kind of scholarship previously unknown in the subject, though I don't think they initially won much attention. The first task he performed for this strange new supervisor was to read the final typescript and check the quotations of the monumental essay on Jonson's *Hymenaei*; his virtue both then and later, when he had his own department, was to insist on the young taking an active part in his work, as he did in theirs. For the first time I saw how the kind of research was done, and conceived a desire to do some of it myself.

There were, however, a number of reasons why this ambition seemed less than wise. That I quickly lost my scholarly innocence under Gordon's instruction was clear from the inroads I was making into Cowley's notes; but I still had a very long way to go before I could do his kind of thing at all let alone do it with his magisterial confidence. Working with Gordon meant using the Warburg Institute, then as now entirely hospitable to all scholars, but at the same time generating a daunting atmosphere of high scholarship. I once asked the director, Fritz Saxl—I think in 1946, certainly in the old Imperial Institute days—about some research I was contemplating, and he asked me in the most natural way whether I thought my Arabic was equal to it.

In the course of the conversation he gathered, with what must, I think, have been a polite affectation of astonishment, that I didn't even have Hebrew. Fortunately these shameful revelations were no further; but it seemed clear—and the presence of such figures as Frances Yates and Ernst Gombrich silently enforced the conclusion—that at 26 or 27 I was simply too old to switch decisively from being the sort of literary critic and historian (with a huge gap in my career) I was, to being even a very minor scholar of the kind Saxl and the others would really want to have around.

So seeing how it was done and actually doing it were not the same thing. What looked like a conjuror's skill—for Gordon, Ficino, Cartari, Comes, Brisonius' *De Ritu Nuptiarum*, Xylander's *Plutarch*, always seemed to open themselves at the right page—could be acquired only with long drudgery. I was ready enough for that, and proved it to myself with a minute reading of Kircher's *Musurgia Universalis*,

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Frank Kermode

which took many hours a day for many weeks. But more than hard work was needed, and I doubted whether I really had that sixth sense which made the spectacle of Gordon at work a bit like that of Alex Higgins playing snooker, all dash and accuracy. He got stuck as rarely that when he did the strongest measures seemed justified; everybody within reach was conscripted to work on the problem, letters and telephone calls recruited the world of learning.

Quite apart from my other deficiencies I was temperamentally incapable of this kind of thing. Gordon was a showman, a *régisseur*; his public performances, whether you liked them or not, were extraordinary very dramatic, always turning on some moment of revelation or recognition. He dressed and talked the part. His dandyish figure was very exotic amid the dirt and ruins of Liverpool. He wore his hair long for those days, and had the kind of laugh that I can only think unsociable, though it made everybody in a room turn towards him; a loud laugh, always scornful even if he was amused. His voice and way of speaking also alienated the orthodox. He had a habit of his known in no one else, of uttering, or innering, words on the intake of the breath; somewhere, still faintly audible beneath the booing and cawing, there remained a trace of refined Lowland Scottish, like that of the Edinburgh ladies whom Muriel Spark remembers from her youth as for ever beginning their remarks with the word *nivertheless*. His spoken Italian, the greatest fluency and assurance, though with a sometimes embarrassing archaism of vocabulary. With his long hair and swarthy good looks he was, as an Italian colleague remarked, *sozzesso Italiano*, a rather dangerous breed. He liked to remind one that James VI and I, a monarch with whom he was on excellent terms, favoured a scholar named Gordon of Dolphinton; with whom, wrote a French panegyrist on that King's accession, and was at once made Dean of Salisbury.

I had no share in his fantasies about the great world, its honours and its rewards. There was a disparity, too, of casual inclination. Nothing bound us except literature and scholarship, and, as I have explained, there were difficulties even in those attitudes. That fruitful friendship might exist between two such persons seems unlikely, but it developed; we were made, as he would say, *a* as notes in music are. For one another thought disaimed by the last word spoken ironically on an indrawn breath. The same formula could be applied to his little department at Reading in the early 1950s, the most productive, if not the most harmonious, I have ever worked in before. It took her broke up; he was not a popular man for he was conceited and scornful and unbalanced. The work he did so brilliantly struck few as important; he was envied because, in the days when there were relatively few chairs in the subject, he had one at 33 and let everybody know and feel it. After 40 he was sick and apparently unproductive; his first book appeared not long before his death, and it was put together by another hand. He, who loved acclaim more than most men, was not honoured by the British Academy. But at Vincenza, where his studies of the Teatro Olimpico had made him a familiar figure and a member of the local academy, the local newspaper carried an elegant obituary, which it might not want to do for any other British scholar. He deserved that; he knew how to leave his mark on a topic, on a group of *eruditi*, on a library (witness the Liverpool collection of emblem books, and the Renaissance and modern collections at Reading) and on a pupil.

I was too late, and of the wrong stuff, but he generously gave me what form he could, and later acquired some from me. He was a great gossip and also subject at times to bours of foolish envy, and because of that we eventually quarrelled; we were reconciled, but the days of shaping were then long past. My close connection with him stretched from 1946 into the 1960s, but it was interrupted by my two years at Newcastle, where I worked (with Ure) under the rule of John Butt, the third of my formers. It isn't easy to imagine two men of the same profession who differed more than Gordon and Butt, though I suppose that they were equally learned and Butt knew as much about music as Gordon did about painting. He was shy and rather severe in manner time needs to remember that in those days subordinates were quite unaffectedly treated as such) though he too was capable of stunning public performances; his Warton Lecture is remembered as the only one in which the audience was moved to applause in the middle of a lecture by the force of a particular conclusive demonstration.

By modern standards we were cruelly overworked—six lectures a week throughout the year, and extra ones as called for, quite apart from classes. The students were ex-service men, hungry for degrees; they might mention to Butt that they wanted to be straightened out on the subject of, say, T. A. Richards, and he would casually ask me to put on a couple of lectures next week. But he himself did far more teaching than we did, as well as attending those of his juniors and explaining what was amiss in them. Thursdays he spent editing *R.E.S.*, I his memory of him bent over proofs, wholly concentrated, in the weak light of a candle during some power cut. He launched Ure and myself on our careers as reviewers—which causes me to reflect that in 30-odd years I have written several hundred reviews, an example I would strongly urge the young not to follow. It is, once one begins, all too easy. Somebody mentioned me to J. R. Ackerley, editor of *Listener*, and so was born the journalist who has wasted so much of my time.

I think of those Newcastle years as formative, certainly; but when Gordon succeeded to the Reading chair in 1946 he took the first opportunity to summon me, and I went without much hesitation. I was 30 by this time, and any more remaking I should obviously have to do myself, though chance or grace might lend a hand. I went on working on Shakespeare and the Renaissance, but in the summer of 1955 something decisive happened: I had written a lecture, *In Memory of Major Robert Gregory* (a lecture rather Yeatsian; I'm afraid), and it turned almost spontaneously into a book called *Romantic Image*. It was not a book either Ure or Gordon or Butt would have written; though it owed something to all three, and especially to Ure and Gordon. Soon after it came out Gordon moved into the same area and began to do the work in his own way, with the usual blend of thorough preparation, intuitive discernment of sources, and, on the climax, splendour of public display. I have not much time for that book now, though it does not trouble me that people still read it. What was good about it was that, however belatedly, it was in my thirties, my own man, with a future doubtless full of follies and errors, but my own to choose. In so far as I was capable of formation, I was, at last, formed.

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Doctoring the figures

Donald Bligh attempts to set the record straight on the completion rates of post-graduates taking research degrees

Concern has recently been expressed in the Press about the completion rates of post-graduates taking research degrees. For example, Charlotte Barry (*THES*, December 19 and January 2) reports an internal survey of the Social Science Research Council showing that only 40 per cent of its PhD students registering in 1973 had completed their degrees six years later. Forty per cent were said to be still registered while the rest had withdrawn.

Data given to me by the Universities Statistical Record (USR) suggests a different picture. There could be many reasons for this. The USR data gives year of enrolment and reason for leaving for full-time and sandwich research post-graduates in England and Wales, who aimed for research degrees and who left in the period 1977-79. This data includes students not funded by research councils. It may exclude some who were, such as those in polytechnics and others who were part-time. While it is strictly correct to calculate wastage and success rates by taking a cohort who entered in a given year, by the time one has waited for every student to graduate or leave, the data is out of date and of doubtful relevance to current funding policies. This difficulty is overcome to some extent by considering only recent leavers, their length of enrolment and reason for leaving. The vast majority of post-graduates either leave after successful completion of their degrees or voluntarily withdraw before that time. A small proportion leave as a result of failure, transfer to another institution, ill-health or death.

The success rates of students leaving in 1977-79 who aimed for PhDs is very different from those who aimed for Master's or Graduate Bachelor's degrees by research. Eighty-two per cent of the former left with their doctorates while only 57 per cent of the latter left with their degrees.

If we consider doctoral candidates it will be seen from Figure One that students in scientific and broadly vocational subjects have completion rates over 80 per cent, while less than 70 per cent of leavers in arts, languages and the social sciences obtained their doctorates. (These groups of disciplines are those used by the USR.) Excepting researchers in medicine, these differences are even sharper if one compares the proportion who qualify by the end of their third post-graduate year. In arts and languages over 10 per cent took more than four years to complete successfully. This proportion is scarcely approached in any of the other subjects. More interesting is that 6 per cent of those who enrol for a PhD in arts and languages withdraw after five or more years, while on the average fewer than 1 per cent do so in other subjects.

One can only speculate upon the reasons for these differences. For example, they could include the contrasting research methods in different disciplines, the varied expectations laid upon post-graduate students, or contrasting patterns of supervision. In departments where the discipline is more structured and where there are many more post-graduates requiring attention their performance is more likely to be regularised and monitored. Supervision may well be closer; and the loneliness of post-graduates reported by other researchers into higher education, may be less.

If this were true—and I must repeat, it is speculation—it might be a factor favouring the establishment of post-graduate schools with which researchers can identify and where they can share and discuss their ideas and methods. It is not necessarily a factor favouring concentration upon a few centres of excellence, firstly because the number of post-graduates required for companionship is small; second, expectations can be made explicit to post-graduates and their supervision can be made regular as a matter of departmental, not national, policy; and third, large institutional concentrations of expertise in specialist areas, while producing short term depth, can in the long run, easily be inimical to the kind of intellectual diversity from which creativity often springs.

The gaps in Figure 1 between the percentages qualifying and withdrawing voluntarily corresponds to doctoral candidates who leave as a result of failure, transfer, ill-health or death. The failure rates are very low. In the period 1977-79 for every five who were failed by the examiners, 600 were passed. Indeed the number of failures is so low that no significant comparisons between disciplines can be made. There is, however, a clear pattern according to the year of study. Compared with the number submitting for examination, failures are proportionately lowest among third years and rise as theses are submitted either earlier or later.

With the exception of students in professional studies where the numbers are small, the completion rates in masters and bachelors research degrees are markedly lower in all subject groupings. With the exception of students of medicine, it is again those in vocational subjects that are most successful. The completion rates in professional studies (86 per cent), agriculture (73 per cent), engineering (69 per cent), and education (60 per cent) are above the overall mean. Those in languages (39 per cent), arts (48 per cent) and social sciences (51 per cent) are below the mean. Although education post-graduates complete their degrees a little sooner than most, and those in medicine take a little longer, there is remarkably little variation between subject groupings from the overall mean of 2.1 years to obtain a Masters or Bachelors degree by research.

In arts and languages over 10 per cent of students withdraw after a period exceeding this mean. It may be tempting to interpret this as saying there are too many students hanging around for long periods before deciding to withdraw; and that pressure should be applied sooner to make them either get on with the job or quit. But it would probably be unfair bearing in mind the nature of research in arts and languages. 2.3 per cent of sub-doctoral research students fail; this is just over 4 per cent of those who actually submit for examination.

It might be expected that there will be wide differences between individual disciplines within the subject groupings used by the USR. Actually the differences are not particularly great. Chemistry PhDs probably form the most distinctive group. First they have a 92 per cent completion rate, which is higher than any other large subject group. Secondly there are many more of them. Although the time has gone when 40 per cent of PhDs were in chemistry, the number is still one in six of all PhDs, twice the number in physics or biology and more than all the successful candidates in arts, languages, social sciences, education and professional studies put together; and even this excludes biochemistry, agricultural chemistry, pharmaceutical chemical engineering and some other subjects in which chemistry is a strong component. On the average chemists complete their PhDs quicker than any other large subject group except education and mathematicians.

Nearly half the successful candidates are in the science group. This reflects not only the overall number of research students on either side of the two cultures, but contrasting norms in the schools for postgraduate degrees. In humanities it is still common practice to take a Master's degree before proceeding to a doctorate. At the two extremes, 20 per cent of successful professional studies graduates taking research degrees obtained PhDs compared with 80 per cent of those in science and corresponding figures for research graduands in agriculture, engineering and medicine are around 70 per cent. The proportions in arts, languages, social sciences and education are all close to 40 per cent. In the three years 1977-79 there were four times as many successful PhDs in science and applied science subjects than in the humanities including the social sciences.

No doubt some people looking at this data will want to make inferences about policies for funding postgraduates. On its own I doubt whether any can legitimately be made, still less do I think any can be made on the currency of different research degrees; but the data may contribute to an improvement or correct one that has already been formed.

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FIGURE 1 PhD CANDIDATES LEAVING DURING THE PERIOD 1977-79

Figures above the bars indicate the number of years or less between enrolment and leaving

Dostoevsky's legend of a life

On the centenary of his death this week Richard Freeborn pays tribute to a Russian writer whose work speaks directly to our age

Dostoevsky as an ensign in 1858 and in later life.

BBC HULTON PICTURE LIBRARY

The death of Dostoevsky a century ago this month is a centenary to be remembered in the same terms as are the centenaries of Dante or Shakespeare or Goethe. Dostoevsky's greatness as a writer and visionary has gradually become acknowledged throughout the world in the past 100 years. His voice, probably more than any other Russian voice from the last century, speaks directly to the sensibilities and anxieties of the twentieth century and has much to tell us that this age of ours still cannot properly assimilate.

His life was one of extraordinary tragedy matched by an even more remarkable fortitude and crowned by a final chapter of domestic happiness. It has a quality of legend or myth. As literary hagiography it is almost without parallel. Geniuses have suffered and survived, but few have suffered the torments of penal servitude and exile, and then deliberately courted further disaster, only to survive terrible indebtedness, gambling fever and epilepsy, as Dostoevsky did.

From which grew the most powerful and memorable novels in Russian literature as well as a body of ideas that anticipated much twentieth-century thought and must leave an unsettling residue of doubt in the most convinced mind, be it Communist or Christian.

He lived almost 60 years, from October 30, 1821 to January 28, 1881. Being born into a doctor's family, he was not an heir to wealth, though his home circumstances provided a wealth of reading, it seems, and he indulged in this pastime voraciously and indiscriminately. A devoted elder brother, Mikhail, shared his literary interests and his later life actively supported him. But run-of-the-mill schooling, the death of his mother when he was in his teens, followed by the supposedly violent death of his father, and his own despatch to a military engineering institute in St Petersburg contributed to Dostoevsky's isolation and an awareness of the precarious character of human relationships.

Prodigal with money, of which he was never wholly deprived, he was not simply following the humanitarian fashion of the decade when, in 1846, he published his first work, *Poor Folk*, which offered a diagnosis of urban poverty and secured him the friendship and praise of the leading Russian critic, Vissarion Belinsky. It was the illustrious beginning to a career in literature that quickly began to lose its lustre. Dostoevsky's interests in abnormal psychological and emotional states, his concern with the escapism of dreams and his daring, if inelegant, experiments in various themes and forms dismayed progressive critics. Then misfortune struck. He was arrested for participating in a revolutionary group, though he was a revolutionary himself, and was sentenced to death, only to have the sentence commuted at the very last moment to one of penal servitude and exile.

The brush with death "as he called it, remained with Dostoevsky for the rest of his days as a memorial of life's extreme precious-ness. He endured what he described as "the house of the dead" of his *katorga* or penal servitude in Omsk and emerged from it with a pardon signed but utterly unswerving commitment to the belief that "there is nothing more beautiful, more profound, loving, wise, more perfect than Christ" and even if it were proved otherwise "then I would still prefer to remain with Christ than with the truth". Yet he was also prepared to admit that to the day of his death he would remain "a child of the age, a child of disbelief and doubt...".

Released from imprisonment after four years, he was obliged to stay in Siberian exile, and as a result for 10 years he was to be divorced from the centres of Russian literary life. When he was finally permitted to return to European Russia, in 1859, he plunged as soon as possible into journalism, for the topical, the day-to-day, the contemporary were the vital source of his inspiration as a writer.

His journalism was dominated by conservative, anti-Western ideas and a conviction that the intelligentsia should look to the peasantry for moral renewal. But journalism in Tsarist Russia inevitably meant the adoption of polemical attitudes and Russia in the 1860s witnessed a violent polemic between liberalism and radicalism, nationalistic and Westernizing attitudes, science and faith, the nihilism of the younger generation and the older generation's traditionalism. In this polemic Dostoevsky became Orthodoxy's advocate. He spoke out against the tyranny of the social utopians who claimed the right to reorganize society for humanity's benefit. In his view, humanity was far too complex, contradictory and destructive for it to acquiesce in the pursuit of rational self-improvement and mutual advantage.

His own life was soon to prove the point. His publishing ventures failed; his beloved brother Mikhail died; his wife (whom he had married in Siberia) also died; he became infatuated with Polina Suslova, a *femme fatale*, and traipsed round Europe after her; and in order to overcome his gambling debtedness, brought on as much by his own improvidence as by the failure of his ventures, he became addicted to gambling, which merely worsened his situation; added to which were the recurrent attacks of the divine disease, epilepsy, from which he had apparently suffered since early manhood.

Penniless, humiliated and abandoned, deprived even of a candle by which to write in the evenings, he was stranded in a hotel in Wiesbaden in the autumn of 1865 and seemed at the very nadir of his career. Yet the resilience of his genius now came to his rescue with the idea for a novel about an impoverished student who murders in order to prove his right to do so, and from this idea grew the first of his great novels, *Crime and Punishment*, one of the masterpieces of nineteenth-century Russian literature.

His tribulations were by no means over. In the course of writing *Crime and Punishment* he found himself faced by an urgent need to meet a deadline for another novel (part of an unwise agreement made with an unscrupulous publisher) and he employed a young stenographer to take dictation. The second novel, *The Gambler*, was finished within a month and the deadline was met. It was a turning-point in Dostoevsky's life.

The young stenographer, Anna Snitkina, was his junior by a quarter of a century, but they fell in love and married early in 1867. Practically at once they were forced into voluntary exile in Europe to escape Dostoevsky's debtors. In this second exile he succeeded in writing two remarkable novels, *The Idiot* and *The Possessed* (or *The Devils*), which offered profoundly disturbing analyses of Russia's internal problems and divisions while suggesting, either through the majestic but flawed ideal of Russian messianism (in *The Idiot*) or through the vision of a Russian possessed by the demons of revolution (in *The Possessed*), how powerful and ambivalent an historical role his own country was to play in regard to Europe.

After returning to Russia in 1871 his wife's efficient management of their financial and domestic affairs enabled Dostoevsky to enjoy a final decade of relative happiness and tranquillity in his homeland. He again turned to journalism, this time producing his own broadsheet, *The Diary of a Writer*, in which he mingled short works of fiction with topical commentary and book reviewing. As the decade proceeded he acquired an important reputation with public readings of his own work and received an ovation for his famous speech on Pushkin in 1880, but the most outstanding achievement of his last years and a fitting climax to his career was the appearance of his masterpiece, *The Brothers Karamazov*, in 1879-80. With that work he carried his inquiry into the nature of justice and faith, atheism and socialism, God and the devil to new—and perhaps still inadequately understood—levels of philosophical and religious meaning.

Dostoevsky's is not an easily accessible world for the average reader. Knowledge of his work in the West increased only slowly and his last novel was not given a proper English translation until 1912. In Soviet Russia, for almost three decades under Stalin, much of his work was unpublished and ignored by critics. His reputation as a "difficult" writer persists, both in the sense that he is a natural dissident, a "second government" (as Solzhenitsyn would put it) inimical to tyrannical governments, and in the sense that, as Virginia Woolf has claimed, "the novels of Dostoevsky are seething whirlpools, gyrating sandstorms, waterspouts which hiss and boil and suck us in".

There is no compromise, strictly speaking, no easy accommodation to be reached between Dostoevsky and his reader. One puts aside received opinion, particularly those properties which anticipate from a novel a well-constructed plot or good characters or plausible behaviour, when one enters the world of Dostoevsky's fiction. If much English fiction bears a resemblance to chamber music or small orchestral pieces, Dostoevsky's major fiction has the extensive properties of symphonic music, but carried forward through violently clashing chords and intense crescendoes. Into this, as into a majestic symphony, a reader is literally sucked, though he will find there a great crowd of characters, operatic *scandal* scenes and violence of a kind that must still appal even the most devoted addicts of fashionable cinematic violence or the theatre of cruelty.

He wrote against the background of an incipient capitalist society which brutalized the poor far more terribly than our own. His glimpses of child beggars, child prostitutes, children violated, of the destitute, demoralized humanity of the great cities, of people driven to despair and suicide and murder, accumulate throughout his work and swarm to the foreground in his picture of nineteenth-century life in his greatest novels. He was gifted with unique and profound understanding of the humiliations of poverty and the strengths by which man can overcome them. He knew the spiritual degradations that accompany addiction, cowardice and subjection to another's will and the pitiful drama and self-delusions which engage men's hearts in compensation.

He recognized that the will to exist and assert and dominate is latent in the least of humanity. The hierarchies for him were not socially defined (save perhaps in his earliest works) but essentially moral, and all humanity was his soul of man, nevertheless, that gives him his contemporary stature.

In this respect he was a Christian who believed in his religion as fiercely, as he believed in his country, though he was no fanatic. His Christianity was tempered by doubt and made the stronger for it. The craving for a belief in God, for the Great Idea made flesh in the person of Christ and for a vision of universal harmony was purified in him through his acknowledgment that God had to be invented and Christ reincarnated, otherwise humanity could pollute even paradise and humanity's ideal of universal freedom could become a reality of universal tyranny.

On this centenary of his death it can be said of him that he not only participated in his work much that we now take for granted in Freud or existentialism, but in his moral example and influence he was the first major Russian writer to bear witness to a Russian ideal of spirituality, whose chief heir in our own day is Alexander Solzhenitsyn. The ideal is not an easy one to live with. It presupposes that life must be tormented as much as ecstasy, that it must be lived to the limit, in almost childlike innocence of heart and mind, and that from such vulnerability to hurt will be born a reinvigorated faith in the human will to endure and triumph.

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BOOKS

Talking about the Peterhouse blues

Religion and Public Doctrine in Modern England
by Maurice Cowling
Cambridge University Press, £20.00
ISBN 0 521 2328 9

by David Martin

Left, Sir Herbert Butterfield; top right, Edward Norman; bottom right, Enoch Powell.

Writing one book is often a useful and even a necessary way of clearing your mind to write another. Lots of writers have several books in their heads, like the disgusting and muddled embryonic eggs inside a chicken. Every now and then a book emerges on the side, more or less well-shaped, in a way satisfactory or appropriate, yet it is not the real book. We rarely write the book we have always really meant.

Clearly Maurice Cowling has been engendering this latest book for 35 years, and still it is not the real work. But it does not appear under the guise of some other book on another subject. No, it is quite explicitly and undisguisedly *not* the final deliverance. *Religion and Public Doctrine in England* is an interim presentation prior to a properly historical work on public doctrine in England since 1840. It discusses the author's relation to the events of which the main work will provide a history, and a commentary on the thinkers who helped him to understand that history.

Put another way, Maurice Cowling has in hand an account of the English ideology, whether manifested in music or manners, government or architecture. I have long desired to read such a book, because the existence of an English ideology seems absolutely clear immediately you leave England, and because I believe it is *prima materia* for the sociology of English religion. Perhaps it is part of this English ideology not to be written down—like the Constitution—and even more to refuse to acknowledge the link with religion, especially with doctrine. In England doctrine is not supposed to be doctrinal and thought is not allowed to be ideological. That is for Roman Catholics, fascists and other peculiar people who have the misfortune to be domiciled the wrong side of the Channel. It is all part of not having a proper intelligentsia.

If Maurice Cowling really does intend to give us "The English Ideology", he is offending against its primary rule, which is to remain implicit. He is being, like so few conservatives, explicit to the point of clarifying his anti-Intellectual intelligence. Does he indeed mean to write something, or merely does that mean the public lecturing finished? It may be finished: and volume two may yet appear, but at least this prologue is still English to the core. There are hardly any footnotes, but lots of asides, qualifications, accounts, commentaries, variegated judgments on all sorts and conditions of thinkers. They are presented as relevant, interesting, circumstantial, having some bearing on the matter in hand. Some (like Eliot) had a religion, some (like Churchill) a public doctrine without much religion about it, and some (like Evelyn Waugh) just manner. Something, of course, is in the state of England. What that rottenness may be is itself not defined, but illustrated and exemplified in people like Arnold Toynbee. The illustration is itself sufficient indication, and if you do not recognise the physiognomy of damnation, you are probably one of them anyway, an *Observer* addict or a *Guardian* mind. To put it with appropriate provinciality, there are certain things which Peterhouse men assume about Kings. Noel Annan, Edward Leach and Bernard Williams are natural Reith lecturers to a man, at least until Peterhouse retires its own candidate in Edward Norman.

What the prologue to a possible account of the English ideology contains is a set of very English hints about a long-harboured disgust over Whig righteousness and liberal high-mindedness. As the author himself says, we have here a celebration of the enmities of some Christian conservatives – as, for example, Sir Kenneth Pickthorn, Edward Wellbourne and the Rev. Canon Charles Smyth. If their names and ideas are a almost unknown to fame, that in itself is rather characteristic. They were all lecturers in the Cambridge history faculty, and all deployed "a manifest distaste for middle-class guilt, elitist liberalism and everything that Toynbee stood for". They controverted that liberalism "with mannerism as much as with explicit statement", and had no wish to propagate notions and ideas in the public prints.

How do you answer "with mannerism"? One way is to be educated but not "intellectual". Another is simply to do certain things, without parade or officious justification. Another is to know who are your friends. Conservatives, after this manner, do not harbour general ideas. Whenever you meet them in the common rooms of Oxford or Cambridge, for example, you have to infer the things they care about by this and that concrete example. Often such people never write at all. Edward Wellbourne, says Maurice Cowling, wrote little. The essence of Wellbourne's persuasiveness lay in his manner, which was "resigned, arch, sarcastic and nihilistic. So little did Maurice Cowling himself understand the nature of the target that he spent the next twenty years trying and fail to target himself. As a matter of fact, the target had been the New Liberalism.

The point about looking for a target is rather astonishing and worth reflecting on. It is a very complex philosophy indeed where the target is taken to decades to disclose the mystery. There are several possible reasons for this. One could be that the sense of something wanting, amiss or downright disgusting is a triumphant New Liberalism was merely a matter of social atmospherics. Those pushed aside but still comfortably ensconced in conditions of moderate privilege, resent the new style and class who essentially do not yet have to feel philosophic objection around which to concentrate their minds. Another reason could be that conservative attitudes are simply a residuum of all those who are unhappy about leftism, but possess no overall unity beyond that. I was once at a meeting which, may indeed, have comprised almost the whole conservative intelligentsia, plus one or two interested outsiders like myself, and I was struck by the variety of attitudes revealed on the topic of education. Almost every possible approach was put forward except the philosophy needed to sustain a Bullerian Polytechnic. That is to say, there was no Establishment view to allow you to assume in automatically exchangeable view of things. Hence the hint and the sidelong example, the assumption that you agree without the substance of the agreement.

Supposing that neither of these is true then we have to follow Cowling and examine those who have embodied a critique of Whiggery. For the recent past we may look to Herbert Butterfield – for the present we may consider Edward Norman and Enoch Powell. It is perhaps of some interest that two of these are branches from the dissenting root. Herbert Butterfield, one of the truly good and great men in English terms, came out of Yorkshire Methodism. As so often happens, it needs a nonconformist to point out the defects of the nonconforming position, both in politics and religion. Enoch Powell is only one generation away from Primitive Methodism. Again, as so often happens, it needs somebody from outside to produce an explicit version of what to insiders are muddled implicit understandings. Both Butterfield and Powell remained in important respects liberals, whatever critique they might have mounted of liberal presumptions and assumptions. Enoch Powell retains many marks of the classic nineteenth-century liberal. (So, for that matter, do Margaret Thatcher, Rhodes Boyson, Ralph Harris, and Keith Joseph, all of them representatives of religious nonconformity).

Herbert Butterfield not only came from a Methodist background but, back in the intellectual gestatory of Action. He was a critical reaction on what was donated by religious and intellectual forebears. For a period in the twenties and thirties he confined himself to historical subjects. He emphasised the role of a presupposition which an historian brings to historical materials, and this emphasis provided the governing context of *The Whig Interpretation of History* and *History and the Marxian Method*. The former book was partly directed at Acton, and also discerned a social and intellectual type, priggishly progressive, which takes from us through the factual complexity of the past as well as short cuts with the more complexity of the present. The latter book is interesting, says Maurice Cowling, because it illustrates the alliance which can be made between Christian and (at conservative critic of liberalism and the Marxist. Marxism is a useful weapon against liberal optimism and helps to undermine the individualist heresy. (The same alliance can from time to time be observed in Edward Norman and it could also be displayed by Reinhold Niebuhr—who surprisingly does not figure at all in these pages, in spite of his considerable impact on the English and American political mind.) I may add that it is a tactic about which I have reservations.

While Butterfield the historian wrote, Butterfield the Methodist preached. What he preached would be almost as interesting to the present we can

BOOKS

In search of the 'deep structures' of culture

Culture, Media, Language : working papers in cultural studies 1972-79 edited by Stuart Hall, Dorothy Hobson, Andrew Lowe and Paul Willis Hutchinson, £10.95 and £4.95
ISBN 0 09 142070 9 and 142071 7

There was a time in the early seventies when the arrival of *Working Papers in Cultural Studies* on the desks of would-be researchers into contemporary culture was a sign that somewhere in the firmament (actually at the Centre for Contemporary Cultural Studies at the University of Birmingham) the study of popular and mass mediated culture was being pursued with particular energy and imagination. In those heady days it was enough simply to immerse oneself in their novelty; Tom Jones, football, motor-bike culture, news photographs, the work of Roland Barthes and Umberto Eco were suddenly the subjects of serious inquiry and seemed worthy of it.

The Centre for Contemporary Cultural Studies was founded in 1964 by Richard Hoggart and was the academic response to the explosion of popular culture itself promoted by the new and, as it turned out, transitory affluence of the late fifties and early sixties. Fashion, satirical television, the rock muzak of liberation, all were the expressions of what George Melly aptly called the revolt into style. Quite suddenly culture was no longer simply high culture, and established standards of taste and excellence were no longer sacred. They were being visibly and audibly challenged by the young, by the working-class and by the disenchanted, money in their pockets, time on their hands, fire in their bellies.

Hoggart's own *The Uses of Literacy* (1957) had focussed both on the precariousness and the strength of traditional working-class culture in the face of the tyrannical homogenization of mass production. The book was a passionate, personal and critical analysis of that working-class culture's resilience and its vulnerability and of the crisis in culture which the new forms had generated. It was a seminal contribution to it not to mould its theme and in method far much of what was to come from the work of the centre.

The themes are clear : what is the nature of working-class culture ; how does it survive within, or even oppose, the culture of the bourgeoisie, the dominant and legitimating culture of contemporary capitalism ? How, equally, does that dominant culture, as ideology, succeed ; how does it contain potential opposition and paper over the cracks of instability and contradiction in the social fabric ? To express the questions in this way is at once to mark the ways in which the centre's work has departed from, as well as depended upon, that of Hoggarts, for his work avoided, in its warm and unself-conscious attention to detail and even at its most critical, both the rhetoric and the substance of Marxist analysis.

In method also Hoggart provides the push for a trajectory which quickly leaves him far behind. "We have to try and see", he wrote in 1957, "beyond the habits to what the habits stand for, to see through the statements to what the statements really mean (which may be the opposite of the statements themselves), to detect the differing pressures of emotion behind idiomatic phrases and ritualistic observances". Stuart Hall, in his preface to the first *Working Papers in Cultural Studies*, took this as the authority to search for what he called the "deep structures" of cultural life and in so doing he opened wide the methodological floodgates.

But however formulated and however answered, the questions raised about culture by Hoggart, Raymond Williams, E. P. Thompson and by a host of European workers were fascinating and important. They were, and are, formidably difficult to resolve. Culture is notoriously elusive conceptually because thought itself is cultural. Contemporary culture is particularly elusive in reality because we are immersed in it. Whereas anthropologists have the (albeit dubious) privilege of material distance between themselves and the cultures they are expected to understand, researchers into our own current, and in this case, the British, have no such luck. They have to disentangle a ball of wool from the inside. On the one hand everything in our culture is obvious ; we all live it day to day. On the other hand everything is invisible ; our actions, beliefs and values are constrained in ways that are, for the most part, unconscious. As a result students of the contemporary have to steer an entirely hazardous course between the Scylla of the banal and the Charybdis of the outrageous. The centre's work inevitably founders on both from time to time.

Nevertheless, under the charismatic stewardship of Stuart Hall and through, very often, collective work, the centre's range of interests has developed and expanded and its increasingly extensive range of publications has borne witness to a sustained level of intellectual commitment and enthusiasm remarkably rare in British academic life. Their work, during the last 10 years, has become the touchstone for most, if not all, of the current study of contemporary culture.

The present volume brings together articles, chapters and extracts from work done between 1972 and 1979. Some of the pieces have already appeared in *Working Papers in Cultural Studies* ; some, and in particular Stuart Hall's important encoding/decoding paper, have only been available in mimeo form, some are fragments from doctoral and MA theses and some are newly written introductions and reviews, to four separate areas of inquiry : contemporary ethnography, media studies, language and English studies. The unevenness of the collection as a whole, both in mood, alternately arrogant and certain and then humble and uncertain, and in content, a mixture of the sophisticated and the jejune, make it difficult to assess. But now that the novelty has passed it seems reasonable to hazard a judgment. Indeed the appearance of *Culture, Media, Language*, seems an invitation to do so.

The dominant impression is centripetal ; it is of a centre without a centre. Stuart Hall provides an introduction to the volume in characteristically punishing prose which documents the developments in the centre's theoretical work since its first involvement with Hoggart's and Williams's analysis of the particularities of English culture and society. Since then theories have been sucked like boiled sweets, and the path is littered with the discarded wrappers ; sociology (*nouvelle vague*), the structuralisms (Lévi-Strauss, Althusser) leave now only a bitter aftertaste. Hall calls this progress.

Sociology was rejected because at the time of its rejection it seemed to be coterminous with functionalism, with a theory of society where change appeared, everything had its place

BOOKS

Conservationist's anthology

The Devon Longwool ewe and her lamb. Taken from A Year in the Life of a Field, published by David & Charles at £7.95. Ecologist and naturalist, Michael Allaby, has written this closely-observed account of a year during which he studied a perfectly ordinary eight-and-a-half-acre field on a Cornish farm, which has been in the hands of the same family for two centuries.

Environmental Awakening : the new revolution to protect the Earth
by Rice Odell
Harper & Row, £8.50
ISBN 0 88410 630 6

The Conservation Foundation in the United States was founded in 1948, and for the past 15 years has published a newsletter. This book brings together extracts from that newsletter, and so forms a record of the concerns of the foundation since the awakening of public interest in the environment in the 1960s. It is a sort of anthology of the opinions of dozens of people, from political leaders to junior members of college faculties, on such issues as food supplies, water, population, pollution from chemicals, energy, and the popular panacea for injuries to the environment: appropriate technology.

The conservation movement in America has a long and honourable history. It began long before 1948; the Sierra Club and the Audubon Society were active for decades before the Conservation Foundation appeared. Vogt's *Road to Survival* and Osborn's *Our Plundered Planet* were published in 1948 and Leopold's essay on *The Land Ethic* in 1949. National Parks were inspired by officials in the American public service over half a century ago. So the title of this book—"awakening"—has to be examined critically. The episode which Odell calls the "Big Bang" in the late 1960s did indeed cause an eruption of anxiety about the vulnerability of the environment and the need "to protect the Earth". But policies to protect the Earth have for the most part been policies to protect man from the consequences of his own lack of foresight, not to protect nature for the sake of nature.

There is an important difference between a man-centred policy for the environment and a nature-centred policy. Man's impact on the environment in the past 30 years has scared him into devising quite efficient man-centred policies. The Control of Pollution Act of 1974, the environmental programme of the European Community, the Environmental Protection Agency in America: all these are essentially insurance policies (and at quite a high premium) against over-exploitation of land, air, and water. But since these policies are to protect man, they can quickly slip from being a high priority if they conflict with other policies to protect the interests of man. Heroic intentions to oppose the Alaska pipeline, for example, evaporated under the menace of OPEC. Unsolved problems about how to dispose of nuclear wastes are not a sufficient deterrent to the building of nuclear power stations if the alternative is a crippling shortage of energy.

So in the search for an environmental ethic we have to ask ourselves frankly: Are there any conditions under which we would put the "interests" of nature before the interests of man? And we have to put "interests" in quotation marks for one, but not for the other usage in this question because it is arguable whether nature can be regarded as having *interests*. Arguable or not, laws are being made that do imply that animals, plants, trees, landscapes do, in a sense, have rights. The natterjack toad makes no contribution to human welfare but it is an indictable offence to kill, injure, or possess a natterjack toad. The Purbish lousewort cannot be said to play an important part in the economy of the United States, but the building of a reservoir in Maine has been suspended because it might endanger this modest and rare plant. So we are in a strange situation: we have no clear notion about the rights of animals and plants, yet we are beginning to legislate on the assumption that they have rights.

The American Conservation Foundation is a responsible and serious-minded body. Along with many other conservation lobbies it is playing an important part in keeping concern for the environment on the boil in America. So I opened the book in the hope that it would do one (or both) of two things: put the present movement into its historical perspective, and offer some original reflections on the idea of an environmental ethic. Alas, the book disappoints anyone who hopes to find in it either of these things. It tells us practically nothing about the historical roots of the environmental movement (mention of the Sierra Club occurs only incidentally in the text), and in the final chapter, on values, makes no advance beyond the incomparably more eloquent exposition in Leopold's *A Sand County Almanac*.

What, then, does the book contain? It consists of scores of quotations, loosely strung together, about very familiar topics, for example the guilt-ridden feeling we have (or should have) that there is food in the undernourished people of the world but they can not afford it, have it brought to them—or to it if it were brought; that in Ancient Mariner's

Water, Water, everywhere,
Nor any drop to drink,

—nor any drop for irrigation—another of the world's immense tragedies; that family planning (contraception) must be accompanied by austerity in the use of energy; that caution in the dispersal of chemicals, are essential if we are to avoid disaster.

The sources of information in the book are mostly journalistic and are not always reliable. For instance, it is a pity to state that concentrations of man-caused carbon dioxide is at new, and then, as the support for this statement, to quote a paper by Callendar written in 1938 and another by Revelle in 1957. Calculations for the prediction that man-made carbon dioxide might change climate belongs to more remote authors: Arrhenius in 1896 and Chamberlain in 1899. And when Odell does come to consider the ethical dimensions of environmental policy, it is a pity that he quotes only snippets from Ophuls's important arguments, and does not refer at all to the central work, *When Values Conflict*, published four years ago under the sponsorship of the American Academy of Arts and Sciences.

Readers of book reviews want to know whether they are recommended to buy the book. For this book my recommendation is no; but if you find it in the library, read the chapter on historical perspectives (the best in the book) and browse through the rest.

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Interstellar physics

The Physics of the interstellar Medium
by J. E. Dyson and D. A. Williams
Manchester University Press, £11.95
ISBN 0 7190 0797 6

Astronomy has grown spectacularly in the past 30 years, following the introduction one after another of a variety of new observational techniques. Radio and later microwave observation from the ground, and rockets and satellites above the atmosphere, have opened up for study the entire electromagnetic spectrum, while new instruments and the increased the scope of ground-based optical astronomy. These developments have led to a much better understanding of the physics of astronomical objects, their intrinsic structure and the processes at work within them—the area of astronomy, and of physics, known as astrophysics.

All this, together with the colourful excitement of the direct exploration of the planets, has stimulated widespread interest in astronomy at all levels, from the general public—to whom astronomy is still one of the most accessible of sciences—through to researchers who have entered the subject from diverse backgrounds. At an undergraduate level there has been considerable expansion. A few universities offer single subject degrees in astronomy or astrophysics and the number of students taking these has increased over the years by more than a factor of 10, but a still greater increase has been in the number of physics students who take one or two optional courses in astrophysics as part of their degree.

It has been a considerable problem for the teachers of such courses to find textbooks of a suitable standard. Most textbooks in astronomy are at one extreme or the other: there are many introductory works, requiring little physics and less mathematics, aimed at the apparently insatiable American liberal arts student; and there are many advanced monographs, on research level and suitable for post-graduate courses; but there is little in between. The present book is therefore particularly welcome: it is aimed at this intermediate level and achieves exactly what it sets out to do.

This is a textbook on interstellar physics, for physics students who are taking a final-year option in astrophysics. Deliberately it does not cover all aspects of the astronomy of interstellar matter; a worthy field, but it is sufficiently detailed to make up a reference for research workers. It derives from the teaching of the two authors in Manchester University, which has also made significant research contributions to interstellar studies.

The interstellar medium is a good topic in which to set astrophysics, since it is dominated by matter existing in a diversity of physical states, with enough complexity to be interesting but simple enough to be understandable at a relatively descriptive level. For stars, whether interior structures or atmospheres are considered, modern theoretical work disappears quickly into massive computer programs, while to understand galaxies it is necessary to know something about both stars and interstellar matter first.

The general standard of exposition here is very good, with many touches that impart physical insight. Now and then, particularly in the earlier introductory chapters, I felt that some point was not explained quite as clearly as it could have been; these mild obscurities, and also the small sprinkling of misprints, are unlikely to make the reader stumble for more than a few minutes. A little more seriously, some of the illustrations have not been carefully integrated into the text: the diagrams themselves are well chosen and well executed, but they are not always well explained. In one case, Figure 2.7, the caption is garbled nonsense. Over all, however, the student should find reading the book both easy and enjoyable.

A list of chapter headings gives an idea of the content of the book: Introduction; How we obtain information about the interstellar medium; Microscopic processes in the interstellar medium; Interstellar grains; Radiatively excited regions; Introduction to gas dynamics; Gas dynamical processes in interstellar space; Our present picture of the interstellar gas and star formation. These cover all the topics to be expected in a discussion of the local physics of the medium. The amount of space devoted to each is a more individual business, for any teacher of such a course will have his own ideas about the relative balance of topics.

The authors have chosen to put particular emphasis on gas dynamical processes, and these sections (about 40 per cent of the book) are particularly well executed. More attention could have been paid to topics such as formation processes for spectral lines, including maser emission, the use of spectroscopy as a diagnostic tool and applications of interstellar chemistry in dense clouds. All of which are discussed briefly. Another interesting subject, the relation of interstellar matter to the structure of the Galaxy, is not mentioned at all; it could be argued that this is astronomy rather than physics and so outside the scope of the book.

It is debatable whether a student textbook should try to cover all aspects of its subject to the same depth, allowing the teacher to select those of interest for his own course. That would perhaps give the book a wider appeal, but it would certainly make it longer and therefore more expensive. Without doubt, those who attend a course based on the present book will have an enjoyable experience and will learn a good deal of worthwhile physics and astrophysics.

W. B. Somerville is lecturer in the Department of physics with astronomy at University College, London.

Plight of the single homeless

The Survivors : a study of homeless young newcomers to London and the responses made to them
by D. Brandon, K. Wells, C. Francis and E. Ramsay
Routledge and Kegan Paul, £6.50
ISBN 0 7100 0468 0

Helping Destitute Men
by John Leach and John Wing
Tavistock, £8.95
ISBN 0 422 76760 3

The plight of the single homeless came to prominence in the 1970s and these two books are both the products of government-funded research into the problem. Each containing more or less explicit information of the extent to which Voluntary Organisations, Hostels and Services (reception centres) meet the needs of their clients and both tends to conclude that the role of voluntary agencies is limited. There the similarity ends, however.

The Survivors concentrates on 107 homeless young newcomers to London. They were overwhelmingly very young people of whom well over half had been in the capital less than one week when interviewed.

By calling these teenagers "survivors" the authors have chosen to emphasize the resilience of the young homeless in contrast to the pathetic picture often drawn by workers in pressure groups and voluntary projects. We wanted to stress the quality of survival and self-realisation which exists in spite of social and economic deprivation can bring out or pinpoint down.

This is an interesting theme and one which has perhaps been neglected although surely not in literary and public accounts of being down and out. It is however simply an assumption made by the authors and supported only by the most tenuous evidence. Choosing as the sample a group who had been in London for so short time is anyway surely inappropriate for a study of survival: these young people had only just dipped their toes in the water. In fact those individuals tracked down in the follow-up survey a year later were found to have mixed feelings about London. They may have enjoyed the pace and excitement, but they were in danger of encountering both the law and social services again—and of failing to "survive". The book's extensive use of quotations is most valuable in conveying an authentic picture of the young people but unfortunately the authors have not analysed this material nor reflected on what it contributes.

Helping Destitute Men looks at the other end of the spectrum—at older men who have been homeless for a long time, at "layered and chronic destitution". They examine in detail St Mungo's, a relatively large voluntary project providing hostel accommodation for single homeless, and also reception centres in London.

In the introductory chapters on concepts of destitution and social policies and surveys and especially in the final chapter, "How best to help destitute men", we are given much thoughtful and sophisticated appraisal of the state of knowledge and of the principles which should influence attempts to help. The emphasis is on encouraging governments to act but also to offer concrete suggestions about what kind of help would be most effective. The problem is one of social disadvantage—a mixture of personal capping factors intrinsic, organic, mental, social, disadvantage and secondary tension. They set out priorities for action to aid survival of men caught in the descent to destitution.

Social reform in this area should be based on the principle that prevention is better than cure, the aim being to reduce the incidence of both social disadvantage and disability.

If severe destitution is likely to remain a serious and urgent problem for many years to come, what might be done to help destitute men more effectively? The chapter on services should begin closer to the streets than do the contributions on reception centres and similar topics beyond them to other forms of help and accommodation. Volunteers have a role to play—but they must not be seen as alternatives or complements to statutory services. Rehabilitation should be seen as a "chain of opportunities" rather than a "ladder" in the sense that one does not require a substantial motivation to make use of it" and so that one can "step into the unknown". Until men have been offered real choices and have been able to determine, by trial and error, how far they are able to go and until adequate provision is made at each level for those who cannot move on, we cannot be said to have given destitute men adequate help. In their situation they have a range of other minority groups and, like severely disturbed people with long histories of institutionalisation, severely damaged social networks, they need the kind of help that is given by the best hostels, welcomed members of the caring professions.

Suzanne MacGregor is lecturer in political sociology at Birkbeck College.

BOOKS

Insights into the intricacies of mechanics

Mechanics
by W. Chester
Allen & Unwin, £15.00 and £7.50
ISBN 0 04 5100 58 6 and 59 4

Introductory Mechanics
by C. D. Collinson
Edward Arnold, £7.95
ISBN 0 7131 2786 4

Classical Mechanics, second edition
by Herbert Goldstein
Addison-Wesley, £9.95
ISBN 0 201 02969 3

These three texts are all aimed at *university students of mathematics* or the physical sciences. However, while the accounts of Chester and Collinson are primarily at the level of first-year undergraduates in mathematics or physics at British universities, that of Goldstein is appropriate for an American graduate, *or perhaps British third-year* undergraduate, course in physics or applied mathematics. One immediate difference is that Lagrangian and Hamiltonian ideas occur early and with detail in Goldstein, late in Chester and not at all in Collinson. Thus Goldstein's book *should naturally be compared* with that of Landau and Lifshitz (*Mechanics*), while those of Chester and Collinson should be *diverse* ways be regarded as closer in spirit to the classics of Lamb (*Dynamics*) and Synge and Griffith (*Principles of Mechanics*). These comparisons are an *initial rough guide since*, for example, Synge and Griffith devote much attention to Lagrangian and Hamiltonian systems in the later chapters of their book.

Before any further comparative remarks are made between these three volumes, it is necessary and desirable to survey each of them in turn. Chester's *Mechanics* has chapters on vectors, kinematics, dynamics, resisting forces, impulse, momentum, work and energy, oscillations, central forces, systems of particles, angular vectors, moments, rigid bodies, virtual work and Lagrange's equations, and non-linear problems, each being accompanied by a wealth of examples. Chapter one contains a careful and scholarly account of vector algebra, vector calculus, scalar and vector fields, field lines, line integrals and equipotentials. The reader is left in no doubt that not all vectors satisfy the laws of vector algebra, the well known example of finite rotations being cited as a counter example. The discussion of field lines from the set of ordinary differential equations is good.

Chapters two and three deal briefly with basic kinematics and dynamics, rather too briefly for my taste, and are followed by chapter four on the nature and effects of solid and fluid friction. I like this discussion, which does bring the student face to face with real phenomena, but it contains some difficult physical and mathematical concepts for a reader whose introduction to conservative systems has been so brief in chapter three.

Impulse comes in chapter five, and I feel it a pity that the student is not introduced to the delta-function sequence at this point, since this can be used to good effect to describe the short-range forces and the impulse associated with sharp blows. The concept of potential energy arises here, and leads naturally in chapter six to a discussion of the oscillations of a particle in an undamped and, later, a lightly damped system. The exposition is mainly by means of examples, and the concepts of potential well and potential barrier are not used.

Central forces, orbits, Kepler's laws and Rutherford scattering *form the subject-matter of chapter* seven. Chapter eight, on Lamb's *Dynamics*, a table of planetary data is given.

Systems of particles and the complications associated with rigid bodies follow in later chapters. Vectors associated with rotation, angular velocity and rotating axes are introduced and treated very clearly in chapter nine. Tensors are not used in the treatment of moments of inertia, a feature consistent with the intended level, although the problems are mainly two-dimensional, but some attention is given briefly to three-dimensional gyroscopic dynamics. Euler's equations are used, but the Eulerian angles are mentioned only in passing.

The book concludes with two relatively difficult chapters on Lagrangian dynamics, done without *Hamilton's principle or the calculus* of variations, and on non-linear problems of dynamics, including autonomous systems, for which the phase plane is a natural mathematical tool, and the use of method of averaging.

The book is a very scholarly account, and forms an excellent introduction to applied mathematics and its associated mathematical methods, through the study of Newtonian dynamics. I believe it forms a worthy replacement for Lamb's *Dynamics*, unhappily no longer available, and I find the balance and treatment of material somewhat more satisfactory than that of Synge and Griffith, another of Lamb's natural successors.

Collinson's *Introductory Mechanics* contains chapters on mathematical modelling, particle kinematics, classical mechanics, *simple harmonic motion*, the Newtonian model of gravitation, three-dimensional particle motion, central forces, special relativity, the motion of a system of particles, relativistic scattering, three-dimensional statics of a rigid body, the motion of a rigid body, *fluid mechanics, and* Newtonian cosmology. Each chapter is followed by an extensive set of examples.

His approach obviously differs from that of Chester in that other applications of mathematics are discussed, not only Newtonian dynamics. *Moreover, a stated object* of his book is to introduce mechanics to first-year university students who may not have met the subject before, as well as to provide a challenging course for those who have. It seems that chapters on special relativity, fluid mechanics and Newtonian cosmology may have been included with the needs of this latter group of students in mind.

Chapters one and two treat vectors and basic kinematics very quickly indeed. Vector products are assumed to be known, and are later used, though vector differentials are defined. In chapter three, Newton's laws are stated and discussed, and some simple examples are shown, both for conservative force fields with potential wells and barriers, and for resistive forces, such as Stokes' law. Simple harmonic motion follows in chapter four, which *includes a treatment* of damped, forced linear systems of the second order; the explanation could have been contracted a little here by use of complex numbers.

Orbit theory in chapter five is essentially restricted to the inverse square law of force, so that the impact of Newton's immense achievement, in showing that Kepler's first and third laws *require* the inverse square law of force, is somewhat muted. To his credit, however, there is a good discussion of transfer (Hohmann) orbits between one planet and another. A table of planetary data is included.

Later chapters deal with further aspects of Newtonian dynamics including the motion of systems of particles, König's theorem (though not given that name), three-dimensional rigid-body statics, the inertia tensor (briefly) and two-dimensional rigid-body dynamics. There is no discussion of gyrodynamics, nor of Lagrangian mechanics.

A treatment of the special theory of relativity is included, a topic well within the compass of first-year students of mathematics. Relativistic scattering is also treated, but here I am not convinced that this is really suitable for such students. More particularly, I find the chapters on fluid mechanics and Newtonian cosmology too involved for the intended readership. Rate-of-strain, for example, is too complex a topic at this stage, especially in view of the reader's relatively limited experience of classical dynamics.

Collinson's book does have many attractive features, not least the stimulating quality of the writing and its attempt to take a broad view of the applications of mathematics. However, it has not the same depth of study in Newtonian dynamics as Chester's book. I would therefore prefer the latter as a first-year text in classical Newtonian dynamics.

The third book on dynamics, the second edition of Herbert Goldstein's classic, is at a quite different level, with chapters on survey of the elementary principles, variational principles and Lagrange's equations, the two-body central force problem, the kinematics of rigid-body motion, *the rigid-body equations of motion*, small oscillations, special relativity in classical mechanics, the Hamiltonian equations of motion, canonical transformations, Hamilton-Jacobi theory, canonical perturbation theory, and an introduction to the Lagrangian and Hamiltonian *formulations for continuous systems* and fields.

The motivation for this book lies in the use of classical mechanics as a "springboard for the various branches of modern physics". A treatment of the "traditional" kind, based on the Newtonian formulation of mechanics, *would not fulfil* this role. Thus it is desirable to introduce the student to Hamilton's principle, Hamilton-Jacobi theory, action-angle variables, canonical transformations, Poisson brackets and the like, through the medium of classical mechanics; it is this *requirement which dictates the early* introduction of Lagrangian and Hamiltonian ideas in the text.

Goldstein's book is a marvellous account of the subject, with fine explicit insight into the intricacies. It is truly a pleasure to read. Although, as mentioned earlier, its true aim is higher, it can be used at second-year level studies in applied mathematics, especially in relation to Cartesian tensors and gyrodynamics. It is more discursive than the book of Landau and Lifshitz, which would not be appropriate at second-year level, and more pointed in its use of tensors than that of Synge and Griffith.

In summary, I believe that each of these three texts has qualities which make them relevant for courses in applied mathematics in British universities: Chester's for a two-year basic course on classical Newtonian dynamics, but with especial reference to the first year; Collinson's for a more general account of the subject and its implications for physics; and Goldstein's for an advanced course on classical mechanics based on Lagrangian and Hamiltonian principles. I am pleased to have each of them on my bookshelf, and to recommend each in its sphere.

J. T. Stuart

J. T. Stuart is professor of mathematics at Imperial College, London.

An "abacist" (right) competes against an "algorist" in a sixteenth-century print. Taken from Mathematical Circus : more games, puzzles, paradoxes and other mathematical entertainments, by Martin Gardner, published by Allen Lane at £5.95. The chapters originally appeared in the author's regular "Mathematical Games" column of Scientific American. As a 65th birthday tribute to "the world's greatest expositor and popularizer of mathematics", a number of his colleagues whose work has been nurtured by Gardner's treatment have written a collection of articles in the Gardner style. The articles have been edited by David A. Klarner and published as The Mathematical Gardner by Wadsworth International of Belmont, California.

Classical numerical analysis

Introduction to Numerical Analysis
by F. Stummel and K. Hainer
Scottish Academic Press, £9.50
ISBN 7073 0130 0

Intended as an introduction to numerical analysis for students of mathematics and physics who are currently acquiring some practical computational experience, this book contains a great deal of material of a theoretical nature on the principal fields of classical numerical analysis. That material is, on the whole, very well presented.

The book's twelve sections are grouped into five chapters. Each section, save section five, ends with a set of numerical examples of applications of those methods described in that section. The first section of chapter one, on the calculation of functions, contains a discussion of Horner's algorithm, partial sums of series, asymptotic and continued fraction expansions, and best approximation. The treatment is brief, as is appropriate in a book of this level. Section two, on the calculation of zeros, contains an account of the bisection method, the method of successive approximations, the simplified and original Newton methods, the method of false position, and a method involving quadratic interpolation combined with the method of bisection. The treatment here is pleasing, considering the space allowed.

Chapter two begins with a section *on interpolation*, extrapolation and numerical differentiation, containing a discussion of Lagrange and Hermite interpolation, and divided differences. Though adequate, the account is rather condensed for the beginner. Inverse interpolation is not discussed, and an adequate treatment of rounding *errors* for both interpolation and differentiation, would have been welcome. The second section, on numerical integration, consists of an account of the trapezoidal, mid-point and Simpson rules; the Bessel, Hermite and Euler-Maclaurin formulae, Romberg integration, and Gaussian quadrature. Again, the account is, on the whole, adequate but rather terse. It is unfortunate, for example, that lack of space precluded a more detailed account of the Euler-Maclaurin formula, because it is used subsequently when discussing Romberg integration. As for rounding error, no explicit discussion of singular integrands nor of infinite intervals of integration is included. This material is, on the whole, very well described.

Numerical methods of linear algebra are discussed in chapter three. Its first section consists of an account of norms, and eigensystems of matrices, including Gerschgorin's theorem and the min-max principles of Courant-Weyl and Poincaré-Riz. The chapter then continues with a discussion of the use of Gauss elimination with partial pivoting to solve systems of linear algebraic equations, and to calculate the determinants and inverses of square matrices.

Some orthogonalizations techniques for the solution of over-determined systems of linear algebraic equations are described with applications to the determination of smoothing parabolas and to discrete harmonic analysis. The numerical instability associated with, for instance, Gram-Schmidt orthogonalization and the consequent need to reorthogonalize is not discussed. Neither is there any mention of the difficulties associated with the numerical instabilities which can arise when orthogonalization methods are used to solve the normal equations for the linear least squares problem. The final section rounds off the chapter with a rather full discussion of the Jacobi and Gauss-Seidel methods; but although overrelaxation is mentioned briefly, no procedure for estimating the relaxation parameter is given.

Chapter four, on systems of non-linear equations and eigenvalue problems for matrices, begins with an account of well known iterative methods for solving systems of non-linear equations, the treatment of the convergence theory being unusually detailed for a book at this level. The following section on eigenvalue problems for matrices, unfortunately does not discuss the efficient LR and QR algorithms but it should provide a very adequate introduction to the more advanced texts in which such procedures are described.

Chapter five, on numerical integration of initial-value problems, consists of two sections—one containing a very nice treatment of consistency, stability, and convergence of one-step methods for first-order initial-value problems; the other a discussion of explicit, implicit and predictor-corrector multi-step methods.

The book does have a number of weaknesses. There are no exercises in the widely understood sense, and there are no flow diagrams or clearly laid-out algorithms from which the reader may write computer programs. Another weakness is the lack of any explicit statement of the results from linear algebra and analysis, which are assumed to be known, together with references in which proofs can be found. There is no author index. References are few, and the bibliography could have been more up to date. Despite this, however, the strengths of the book outweigh its weaknesses, and at £9.50 for a paperback edition, it is difficult to find a text at this level which contains so much.

M. A. Wolfe

M. A. Wolfe is lecturer in the Department of applied mathematics at the University of St Andrews.

NOTICE BOARD

Noticeboard is c... by Patricia Sandl... Mila...

People

David Farley Hills has been appointed to the chair of English Literature at the University College of Swansea in succession to Professor C. J. L. Price. Dr Hills has served on the Council of the Queen's University, Belfast, and has been Chief Examiner in English A level for the Northern Ireland GCE Examination Board.

Dr Gilbert Smith has been appointed to the chair of social administration at the University of Hull and will take up the post on June 1, 1981. Dr Smith is at present reader in the department of social administration and social work in the University of Glasgow.

Dr Hugh Tunstall Pedoe, senior lecturer in epidemiology at St Mary's Hospital Medical School, London has been appointed to the chair and directorship of the cardiovascular epidemiology unit in Ninewells Hospital and Medical School (University of Dundee).

Appointments

Universities

Aston, Birmingham
Contract Research fellows: Mrs S. B. Wiltshire (chemistry); C. Serpi (construction and environmental health); S. H. Chaiwala (pharmacy). Research assistant: Miss C. H. Bamford (educational enquiry). Lecturers: C. B. Barker (educational inquiry); Dr C. Lane (sociology and social history). Contract research assistant: Mrs A. L. Barnard (educational inquiry). Visiting reader: D. Bear (Electrical and Electronic Engineering). Contract research officers: Ms Jane Cosgrave; Dr D. M. Killen (management centre). Senior research fellow: Dr M. J. Tisdale (pharmacy).

Durham
Chairman of the board of studies in geography: Professor J. I. Clarke. Reader: Anthony T. T. Smith (law).

Cambridge
President of New Hall: Dr Valerie Pearl.

Hull
Director of the University Health Service: Dr W. T. Richardson.

Polytechnics

Teesside
Tony Addyman, Manchester University lecturer and chairman of BSI programming languages committee, is being seconded from part of his university duties to work at the National Computing Centre on the compiler validation project being undertaken in conjunction with the National Physical Laboratory. The work is supported by the Department of Industry's Computers, Systems and Electronics Board.
Professor Malcolm S. Adiseshiah, vice-chancellor of the University of Madras, and former deputy director-general of Unesco, has been elected chairman of the board of Unesco's International Institute for Educational Planning. He succeeds Professor Torsten Husen of Sweden.
Clare Smart, director of Youthaid, has been appointed to represent the interests of youth organisations on the MSC's Special Programmes Board.

Honorary degrees

Zimbabwe
The following will be award honorary degrees at the end of February or early March: ... Sir Hugh Springer, its ... edition of his services to history and education internationally; Mr David Young, the ... secretary of the Rhodesian Treasury.

Correction

In the TES of January 16 it was incorrectly stated that Dr Brinley Roderick Rees, investiture for honorary degrees of LLD in recognition of his services to industry in Wales. This should have read in recognition of his service to the University of Wales.

FILM AND EMPIRE
...mentary ... history, film ... Convention ... Bloomsbury Hotel, ... April 9 ... April 10.
... Details from:
... Department of ... Film,
... Imperial War ... Museum,
... Lambeth Road, London S.E.1.
... Telephone 01-735 8922 ext. ...

"Wills Neck, Quantocks" by Hans Schwarz judged to be the best watercolour and awarded a £5,000 prize in the Hunting Group National Art Prizes art sponsorship last week. The Hunting Group National Art Prizes is a new annual event jointly sponsored by Hunting and the Federation of British Artists. Each year paintings will be chosen from the open exhibitions of seven of the FBA's societies which include the Royal Institute of Painters in Watercolours and the Royal Society of Portrait Painters.

Grants

Aston, Birmingham
Applied Psychology—Dr G. Cumberbatch—£48,500 from the Home Office for a study to evaluate a community policing project in the Lozells area of Birmingham; Dr J. Patrick, P. Spurgeon—£17,160 from Cement Makers Federation for Kiln Burner Training Project in the cement manufacturing industry.
Chemistry—Professor F. M. Page—£131,226 from the SRC for research in chemistry of solid fuels; Professor J. A. Blair—£28,353 from the Cancer Research Campaign for research on disposition and metabolism of foxtates in malignant disease and health; Dr S. J. Moss and Dr B. J. Tighe—£15,510 from the SRC for preparation and evaluation of plasma developable photo resist for the manufacture of integrated circuits.
Chemical engineering—Dr E. Smith—£78,550 from UKAEA for research on gasification of biomass; a programme of experimental investigations and design studies.
Joint unit for research on the urban environment—P. Joyce—£15,750 from the Department of Environment for prospective survey of contaminated sites in the West Midlands County Council £30,080 from the Commission of the EEC for an investigation on the employment, research and development implications of the environmental industry in the EEC.
Modern Languages—P. Takiguchi—£24,667 from Japan Foundation as a grant for temporary lecturer appointment in the field of Japanese studies.
Pharmacy—Professor P. S. G. Stevens—Dr A. Gescher and Dr J. Hickman—£27,917 from the Cancer Research Campaign for the research carried out by the Experimental Cancer Chemotherapy Research Group.
Technology Unit Policy—Professor E. Braun—£4,700 from the Leverhulme Trust for work on the history of solid state physics.
Department of the Environment—Professor J. Beddington and Professor R. Hamilton—£127,000 for the Department of the Environment programme of research on the effects of acid rain on forests and lakes.
Department of the Environment—Professor A. Cottrell—£50,000 for research into cement compositions, effects on corrosion of steel in concrete.
Electrical and electronic engineering—Professor R. Hood—£29,028 from GTE Laboratories Incorporated for research in digital communications—modernising national communications; Professor Peter Portner—£22,217 from the Department of Industry for research on computer aided control in oil hydraulic systems.
Mathematics and Statistics—Professor T. J. Dillimore—£23,836 from the SRC for research into theoretical and computational aspects of information and flow under complex streaming.
Pharmacy—Dr I. Gould—£17,070 from the Lord Dowding Fund for research into interaction of aminoglycosides with bacteria and model mammalian membranes.
Physics—Dr R. G. Vartapetian and Professor J. Mulvey—£46,400 from the SRC for experimental and theoretical studies of liquid metal field ion emission sources.

Kent
Social administration and social work

£24,275 from the Home Office Research Unit in support of an evaluation of "The Medway Close Support Unit" under the direction of Mr F. J. Ely and Dr A. K. Swift.
Organic chemistry—£97,000 from the NATO Scientific Affairs Division for investigation on charge distribution in the transition-state for intramolecular acyl and sulphonyl group transfer reactions, under the direction of Dr A. Williams.

Keele
Communications and neuroscience—Professor E. F. Evans—£51,358 from the MRC for investigation on behavioural, physiological and anatomical study of otoxonic cochlear pathology.
Physics—N. M. Allinson—£24,059 from the MRC for work on physiological signal processing using dedicated charge-transfer-device - microprocessor systems.
Geography—A. D. M. Phillips—£14,237 from the SSRC for work on the spatial adoption of farm buildings in England 1850-1900.
International relations—Dr R. J. Vincent—£14,161 from the SSRC for work on human rights in world politics.

Leicester
Anatomy—Professor F. Beck—£14,731 from the Medical Research Council for research into the nutritional mechanism in the early rate embryo and their susceptibility to modification by teratogens.
Biochemistry—Dr Eric Cundliffe—£76,678 from the MRC for studies of antibiotic resistance mechanisms in producing organisms.

Sussex
Chemistry—£90,850 from the SRC for the study of synthesis and evaluation of enzyme-like catalysts, under the direction of Professor Sir John Cornforth, FRS; —£66,447 from the SRC for a laser study of intermolecular forces, under the direction of Dr A. J. McCaffery.
Experimental Psychology — £387,207 from the SRC for research into computational modelling of human vision; —£74,078 from the SRC for studies on the variations in maintenance turbulence characteristics and local boundary layers around turbine blade sections, under the direction of Professor F. J. Bayley; —£58,690 from the SRC for studies of transient heat flow measurements in rotation cavities, under the direction of Dr J. M. Owen.
Plant Physiology—£109,092 from the Ministry of Overseas Development for research into the mechanism of salt tolerance in rice, under the direction of Dr T. J. Flowers.

Wales, Cardiff
Mechanical engineering and energy studies—Professor B. J. Brinkworth £24,658 from the SRC for research on the control of solar energy thermal systems.
Computing mathematics and sociology —Professor R. F. Churchhouse, £79,018 from the SSRC for research on integrated software environment for social science research.
Metallurgy and materials science—Dr R. D. Jones—£20,285 from the National Research Development Corporation for a research programme on manganese maraging steel.
Mineral exploitation—Professor K. M. Brown—£19,500 from the National Coal Board to continue his research on outburst of coal and gas in mines.

Welsh National School of Medicine
Haematology—Professor A. L. Bloom and Dr I. Peake—£67,725 from the MRC for a project on biochemical and immunochemical studies of factor VIII using monoclonal antibodies.
Child Health—Dr I. A. Hughes—£17,889 from the Wellcome Foundation for an investigation of disorders of sexual differentiation with reference to syndromes of androgen resistance.
Medicine—Dr R. V. Healey—£46,700 from the MRC for an investigation of intestinal mucosal-related immunity in patients with inflammatory bowel diseases.
Pathology—Dr W. E. Evans—£17,000 from the South Glamorgan Health Authority (Teaching) for a Welsh Regional Research Development of Health Medical Biochemistry—Dr D. Stansbie —£18,973 from S.G.H.A. (T) in support of the Welsh scheme for the development of Health and Social Research.

Forthcoming

Women in Libraries is the ... a one-day conference organised ... Feminist Librarians' Group ... at the polytechnic of Central ... on February 7. It will cover ... areas —women's position ... management hierarchy ... vices and the importance ... of women library workers ... to the stock and services ... raries offer to their ... their information from ... sen, 115 New Cavendish ... don W1.

* * *

"Peasants and Countrymen ... ture", a three day conference ... the sixth hundredth anniversary ... Peasant's Revolt is to be held ... Roehampton Institute of Higher ... cation from February 13-15. The ... ference will explore the ways in ... the image of the peasant ... projected in our culture from ... medieval and Elizabethan times ... to the paintings of Van Gogh ... plays of Edward Bond. Further ... mation and tickets from the ... Department Secretary, ... College, Parkside, London SW1.

* * *

"Engineering and the ... Council", an open lecture by Professor ... Sir Geoffrey Allen, chairman of the ... SRC, is to be delivered in the ... at 5.40 pm at the Institution of ... Engineers, Great George Street, London ... SW1. Admission open.

* * *

"The Thirties Revisited", a ... programme of lectures, films and ... material on the 1930s is to be held ... the Polytechnic of North London ... February 2-4. Speakers will include ... A. J. P. Taylor and Professor ... Marwick and the Open ... Admission is free. Further ... from Ann Morris, the Polytechnic ... North London, Prince of Wales ... Kentish Town, London NW5.

* * *

"Microcomputers in ... seminar for heads and governors ... be held at the Polytechnic of ... London on February 25. Speakers include Mr R. Fothergill, the head of Education and Science Micro... Roy Atherton, head of ... education, Bulmershe College of ... cation. Fee: £5.00. Further ... mation from Sheila Swallow, 33 ... Street, London, W1.

* * *

"Education for Adults: The ... for the 1980s" is one day ... organized by the Regional ... Council for Technological ... for London and the Home ... to be held on February 2 ... Central Institute, London ... London NW1. The conference will ... bring together those responsible ... decisions regarding the ... vision for adult education in ... responsible for implementing ... decisions. Speakers include Dr ... Smethurst, director of the ... University's department of ... studies on The 1980s: An ... view of adult education". ... Further details from D. T. ... RAC Director, Tavistock House ... Tavistock Square, London WC1.

Recent publications

Educational Research ... ...ster of current educational ... projects funded by the Scottish ... cation Department. It includes ... of the SED funded projects ... the five main outlets in ... cational research such as ... education and the Scottish ... for Research in Education or ... Educational Technology at ... United Kingdom Research ... cation Statistics should be ... Research and Intelligence ... Room 4/27 St Andrews House ... burgh, EH1 3SY.

Open University programmes January 31 to February 6

Saturday January 31

RADIO 3 (VHF)
6.55 am ... Weather ... the News
7.00 ... Concerto ... Mozart ... Piano ... A27
11.35 ... Concerto ... Mozart ... Piano ... A27
12.55 pm ... Weather ... the News
1.00 ... Concerto ... Mozart ... Piano ... A27

RADIO 4 (VHF)
7.15 Farming Today
7.30 Today's Papers
7.35 Weather, Travel, Prices and Time
7.45 Yesterday in Parliament
8.10 Woman's Hour
9.00 News
9.05 Start the Week with Your Family Doctor
9.45 Daily Service
9.55 Weather
10.00 News
10.02 Morning Story
10.15 Time Out
10.45 Morning Service
11.30 Time Out
12.00 News
12.02 pm You and Yours
12.27 Gardening Today
12.55 Weather, Programme News
1.00 The World at One
1.40 Woman's Hour
2.30 Afternoon Theatre
3.30 Time Out
4.00 News
4.02 Kaleidoscope
4.45 Time Out
5.00 PM
5.40 Shipping Forecast
5.45 Time Out
6.00 News
6.30 The First Years of Life
6.45 Time Out
7.00 The Archers
7.15 Science Report
7.30 Time Out
8.00 Any Questions?
8.45 Time Out
9.00 News
9.15 Kaleidoscope
9.45 Time Out
10.00 The World Tonight
10.30 Time Out
11.00 Weather, Programme News
11.02 Book at Bedtime
11.15 Time Out
11.30 Shipping Forecast
11.35 Time Out
12.00 News
12.02 am Closing Programme

Sunday February 1

RADIO 3 (VHF)
6.55 am Weather ... the News
7.00 Concerto ... Mozart ... Piano ... A27
11.35 Concerto ... Mozart ... Piano ... A27
12.55 pm Weather ... the News
1.00 Concerto ... Mozart ... Piano ... A27

RADIO 4 (VHF)
7.15 Farming Today
7.30 Today's Papers
7.35 Weather, Travel, Prices and Time
7.45 Yesterday in Parliament
8.10 Woman's Hour
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9.05 Start the Week with Your Family Doctor
9.45 Daily Service
9.55 Weather
10.00 News
10.02 Morning Story
10.15 Time Out
10.45 Morning Service
11.30 Time Out
12.00 News
12.02 pm You and Yours
12.27 Gardening Today
12.55 Weather, Programme News
1.00 The World at One
1.40 Woman's Hour
2.30 Afternoon Theatre
3.30 Time Out
4.00 News
4.02 Kaleidoscope
4.45 Time Out
5.00 PM
5.40 Shipping Forecast
5.45 Time Out
6.00 News
6.30 The First Years of Life
6.45 Time Out
7.00 The Archers
7.15 Science Report
7.30 Time Out
8.00 Any Questions?
8.45 Time Out
9.00 News
9.15 Kaleidoscope
9.45 Time Out
10.00 The World Tonight
10.30 Time Out
11.00 Weather, Programme News
11.02 Book at Bedtime
11.15 Time Out
11.30 Shipping Forecast
11.35 Time Out
12.00 News
12.02 am Closing Programme

Thursday February 5

RADIO 3 (VHF)
6.55 am Weather ... the News
7.00 Concerto ... Mozart ... Piano ... A27
11.35 Concerto ... Mozart ... Piano ... A27
12.55 pm Weather ... the News
1.00 Concerto ... Mozart ... Piano ... A27

RADIO 4 (VHF)
7.15 Farming Today
7.30 Today's Papers
7.35 Weather, Travel, Prices and Time
7.45 Yesterday in Parliament
8.10 Woman's Hour
9.00 News
9.05 Start the Week with Your Family Doctor
9.45 Daily Service
9.55 Weather
10.00 News
10.02 Morning Story
10.15 Time Out
10.45 Morning Service
11.30 Time Out
12.00 News
12.02 pm You and Yours
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5.40 Shipping Forecast
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6.45 Time Out
7.00 The Archers
7.15 Science Report
7.30 Time Out
8.00 Any Questions?
8.45 Time Out
9.00 News
9.15 Kaleidoscope
9.45 Time Out
10.00 The World Tonight
10.30 Time Out
11.00 Weather, Programme News
11.02 Book at Bedtime
11.15 Time Out
11.30 Shipping Forecast
11.35 Time Out
12.00 News
12.02 am Closing Programme

Friday February 6

RADIO 3 (VHF)
6.55 am Weather ... the News
7.00 Concerto ... Mozart ... Piano ... A27
11.35 Concerto ... Mozart ... Piano ... A27
12.55 pm Weather ... the News
1.00 Concerto ... Mozart ... Piano ... A27

RADIO 4 (VHF)
7.15 Farming Today
7.30 Today's Papers
7.35 Weather, Travel, Prices and Time
7.45 Yesterday in Parliament
8.10 Woman's Hour
9.00 News
9.05 Start the Week with Your Family Doctor
9.45 Daily Service
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8.45 Time Out
9.00 News
9.15 Kaleidoscope
9.45 Time Out
10.00 The World Tonight
10.30 Time Out
11.00 Weather, Programme News
11.02 Book at Bedtime
11.15 Time Out
11.30 Shipping Forecast
11.35 Time Out
12.00 News
12.02 am Closing Programme

† Revised programme

The future of management education

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Keeping apace with the industry

Sir Terence Beckett looks at today's business problems

Any review of management education today must start with the questions: where are we now and where do we seek to be?

The problems which industry faces today are not just those which have received so much publicity in recent months such as excessively high interest rates or an overvalued pound. Industry is coping with the results of years of high inflation accompanied by the problems of levels of productivity far below those of its competitors. These conditions are the result of 30 years or more of poor management both by successive Governments and also by industry.

Managers in business and industry must accept their share of the responsibility for the total shortcomings. The blame cannot be divided between Government and trade unions and an equal, if not greater, part ignored by managers. Management has failed to adapt to changes in the workforce and in the markets. It has failed to show effective leadership both in strategic planning and in dealings with employees, and has, until recently, failed to attract its proper share of the available talent in the United Kingdom into trade and industry. Most serious of all, it has failed to prepare properly for the future, particularly in terms of training of employees and in terms of producing goods which will sell.

I have presented something of a chronicle of despair—but I believe nevertheless that industry has to be realistic about where it is, if it is to make progress in directions that it desires.

The chief reason I took on my new job as director-general at the CBI was a concern that it was not only the inefficient companies and those that had to face long-term structural decline that were getting into serious trouble, but some very good companies which had done the right things, make themselves prosperous, were also in difficulties. The erosion of an industrial base must be of serious material concern to everyone. There is a danger that when the recession ends, there will no longer be the capacity or the resources to step up to the higher levels of demand. If the decline continues very much further our only standards of living but a way of life will be at risk.

First, in adversity, we should count our blessings. We are apt to lose sight of the fact that we do have plenty going for us. There is North Sea oil and gas and large coal deposits in a fuel hungry world. Britain is the only major industrialized country in the world that is self-sufficient in energy. It has outstanding commercial and financial expertise. In spite of the depressions sometimes created by the media, Britain has a politically stable population. And, above all, it has the skill and ingenuity of its people. Surely it can bridge the chasm between the present very unsatisfactory state and the brilliant opportunities these resources should provide? The turn-round will not take a life-time. No one can afford to wait that long.

Some of the adjustments need action at national level. More important, in the present context, what has to be done at company level? First on the national scale the overriding priority must be to control inflation by controlling public spending. Secondly, a reduction in interest rates. And thirdly, Government action to ensure that abundant supplies of energy are used to nourish industry at costs no higher than competitors'.

In the longer term more continuity in Government policy is needed. It is high time that some measure of consensus was reached by both main political parties on a humane and socially responsive market economy. The shifts and changes in recent years have acted greatly to industry's detriment and this cannot continue.

As far as companies are concerned there are two simple objectives. First, to improve products and services so that they are wanted more than those from anywhere else in the world. Secondly, to reduce costs. Many skills and actions are needed to achieve these apparently simple objectives.

None of these will come about without better management. Good management requires the application of intellectual ability which is at least as demanding as that needed in academic life or in the learned professions. One of industry's derelictions in the last 30 years, in this country, has been to fail to convince people not only that industry is the creator of our national wealth, but to show that industrial management is a demanding, rewarding and utterly fascinating pursuit. There are many reasons why the acceptance of this proposition matters, but the most important is that only by doing this will industry get its proper share of the country's best talent.

What then are the implications for our systems and processes of education, including management education? Philip Nind, the director of the Foundation for Management Education, in a paper on "Management and Learning" given at the Yorkshire Regional Management Centre pointed to some of the historical reasons for failure to recognize the kind of intellectual leadership which is widely recognized in all sectors of the community in France.

It is suggested that "in contrast to all other countries, there is in Britain a streak of anti-intellectualism which has affected every aspect of our national life, and none more damagingly than industry".

This trait was the hallmark of the British ruling-class traditions in the age of Empire. It then comes as no surprise that at the time of the industrial revolution England set up mechanics' institutes, while in France in the latter half of the eighteenth century were founded their *Grandes Ecoles*—most of the earlier ones being engineering schools. Britain has paid dearly for this trait which labelled the "intellectual" as "theoretical" and distinct from "practice".

As if theory and practice can really be separated! One result of this separatist attitude was the low esteem in which industry and commerce were held. Another, perhaps more serious, was the distinction between the study of science and technology and arts subjects. The dilemma is well illustrated in Dr Duncan Davies's Maurice Lubbock Memorial lecture last November on "Technologists as National Policy-makers". He argued that there is a need for technologists, and especially engineers, to extend their understanding of big social systems and their politics and economics.

"It is no longer practicable for national policies to be formulated without the active and central participation of technologists and engineers with a direct understanding of production, development, maintenance and design matters and yet most of those in Britain who have such understanding lack political and macroeconomic experience and confidence", he said.

This is a plea for the integration of the arts and sciences in the training and development of people Duncan Davies calls "technological generalists". The same themes pervade the Finniston report both in its call for better integration of theory and practice in the education and training of engineers and also in its references to the "engineering dimension"—the closer integration of engineering and management in the pursuit of economic recovery.

The Finniston inquiry conducted its own study of the training of engineers in other countries. It is perhaps significant that of Japan it reported: "The Japanese approach to engineering appeared to us to be totally market-orientated".

Britain has an impressive record as a nation of innovation, of research and development. Too often, regrettably, it has omitted to take into account the market response to anticipate its requirements. Product planning is an essential component of the education and training of the manager and one which is vital to an industrial recovery.

The scarcity and rising costs of materials and energy. Society is going to be faced with diminishing resources. We have in the United States are certainly no exception. We are facing severe shortages of chromium, copper, tin, aluminum, as well as a growing shortage of petroleum. We are at the moment importing some 50 per cent of the metals just mentioned and, as almost everyone knows, at least 40 per cent of our petroleum needs. This divergence between the haves and have-nots in materials is going to be a continuing, festering source of contention between developing and developed societies. We are seeing it dramatically now in Iran and in many African countries where deep hatreds are felt towards the West and where, if a scarce resource is available, it may very well be used as a weapon against the developed, industrialised countries.

Continued on page 22

Prepared for a world market

by William Voris

I have been involved the past three years in a programme sponsored by the American Assembly of Collegiate Schools of Business and its European counterpart, the European Foundation for Management Development, to look into the future of management and management education. Its goal was to decide what the manager must do to perform capably and then to translate these functions into his education and training. It is anticipated that the end result of this joint project will be an upgrading and changing of education and training on a worldwide scale. The practice of management will become more and more universal, so the inputs from Europeans and Americans pooling ideas are of great importance.

The project was divided into three phases. Phase One was a determination of what society expects from its business firms, its governments and its fellow human beings. Phase Two was the translation of those needs of society into the implications of this to management practice. Phase Three was a determination of what managers must know in order to run business firms in the future and where they should acquire the knowledge.

To implement Phase One, a colloquium of 40 futurists, thinkers and educators was held at Windsor Castle in January, 1979. Phase Two was held at Arden House, Columbia University, in New York in the autumn of 1979. At this colloquium there were approximately 40 business men and educators. Phase Three was held in Paris on June 16 to 18, 1980. This was a gathering of about 50 educators and business men from Europe and the United States. Since I was intimately involved, I would like to present to you my interpretations of what was said and done during this far-reaching project. For the interested reader, detailed reports of all three phases are available from the AACSB headquarters in St. Louis.

Here are some of the factors which will affect societies in the future which, in turn, will affect business management and education:

The scarcity and rising costs of materials and energy. Society is going to be faced with diminishing resources. We have in the United States are certainly no exception. We are facing severe shortages of chromium, copper, tin, aluminum, as well as a growing shortage of petroleum. We are at the moment importing some 50 per cent of the metals just mentioned and, as almost everyone knows, at least 40 per cent of our petroleum needs. This divergence between the haves and have-nots in materials is going to be a continuing, festering source of contention between developing and developed societies. We are seeing it dramatically now in Iran and in many African countries where deep hatreds are felt towards the West and where, if a scarce resource is available, it may very well be used as a weapon against the developed, industrialised countries.

Continued on page 22

The author is director-general of the Confederation of British Industry.

5th Edition

IN PREPARATION: APRIL

The B.G.A. Guide to Business Schools

Compiled by C. COULSON-THOMAS

This book is intended for prospective business school students and for employers of business graduates, and provides information about the current state of business education and about the schools which offer courses in this field. It is published for the Business Graduates Association Ltd., which was founded in 1967 by a group of British business graduates, with the aim of advancing business education for the benefit of the productive sector of British society. The latest edition of the Guide has been updated to take account of changes in the field of business education. It covers a large number of business schools world-wide, and is still the only such reference book in existence.

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IN PREPARATION: FEBRUARY 1981

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—*Milton Friedman* January, 1981, £15.00

DEMOCRACY, AUTHORITY & ALIENATION IN WORK
Workers' Participation in an American Corporation
John F. Witte

Having joined a large Los Angeles-based corporation as a participant-observer in a project in workplace democracy, Witte now presents an analysis of the first three years of that project. He focuses on the problems, promises, and potential of workers' participation in an American setting, and considers that this will be extremely difficult to achieve given the widely held American faith in meritocracy and the concomitant belief in corporate authority and distribution of influence and reward. It is this commitment to meritocratic norms, Witte believes, that establishes the limits of democracy in economic enterprise. January, 1981, £12.00

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Prepared for a world mark

Continued from page 21

William Voris looks at the problems facing managers beyond the 1980s

The changing international order. We are in the middle of the North-South, East-West debate. The developing nations, or so-called "South", are not going to be content to get handouts from the wealthy north. Managers of multinational corporations wishing to work with developing countries because of their resources, because of their markets, because of their geography, are going to have to face up to growing antagonism. Detailed knowledge of differing cultures and languages is going to be extremely important. I predict an equalization of political power between the North and the South within the next 30 years. These developing nations are not going to be held back.

Changing values and social beliefs. There is no question in my mind but that hierarchical authority is diminishing. The idea of the management pyramid with the complete authority, accountability and responsibility originating at the top is changing. Already there is a growing demand for more participation in decision making, and an increasing emphasis on equality. We Americans have our own value system and cannot understand why everybody else does not buy it. Hardly anybody will. We are going to have to face up to this fact. There are peoples in this world who have been pummelled and pushed, disdained and colonized by the British, French and Dutch. This is changing and it is going to change decision-making. The growing trend towards non-economic societal goals, meaning that there is much more to life than making a living, will tend to constrain the authority of management and the ability of management to motivate. The changes that are taking place in society will demand a very broad-gauged manager at all levels. By that, I mean managers in the supervisory role on the front line, in middle management, and those at the top.

Changing attitudes toward institutions. There is a growing tendency now for people worldwide to be sceptical about traditional institutions. Those of us who have lived in foreign countries are aware of the widespread contempt that people have for central government —for authority of any kind. They are so used to bribery and corruption, highhanded tactics, and cruelty, that they just do not trust anyone who may be in the government. We are getting that way in the United States. Polls have been taken of the attitude of Americans towards the Congress. They show the American people really do not have faith in our legislative branch. We have an interesting paradox here in the United States where the people in many ways want more governmental intervention to do things that other institutions cannot do and yet they are becoming more and more critical of performance. Also, worldwide, we are getting a growing number of institutions which are conflicting with managerial authority. In Europe, the labour unions have become extremely powerful. Employees are participating directly in management and management decisions. They are serving on boards of directors, etc. Religion on a worldwide basis is becoming much more powerful. A dramatic example is the impact of the Moslem religion on countries such as Iran, Lybia, and Saudi Arabia.

The impact of science and technology. People worldwide are fearful of the power of science and technology. They are questioning the monopoly held by technology in the industrial West. Should technology be controlled by government, is a question frequently asked. The inner fear of nuclear energy is a fine example. Should it be controlled by governments? There are important questions being asked about the impact on people of the continued mechanization of production.

The attitude of people toward the growing vulnerability of societies. As communications and weapons and hatred become more widespread, people are taking advantage of the vulnerability of societies. We see the example of the militants in Iran challenging the world's greatest economic and military power, the United States, successfully. Terrorists are in action throughout the developing and developed world. An American ambassador was killed in the Sudan. Another American ambassador was killed in Afghanistan. An American ambassador was imprisoned in a Latin American embassy.

Merging classes and groups of people. There are going to be more and more women becoming managers and climbing the executive ladder. There will be grave implications with working wives and two-income families. There will be radical changes in traditional family roles and constraints. There will be problems of acceptance of male and female authority by subordinates and peers and superiors. There will be aging populations with changing attitudes towards retirement in the industrial, advanced nations. There will be more minorities moving into managerial responsibilities with the same kind of problems. The blacks, the browns, and the yellows will be intermixing in job situations.

Assuming these demands of society, what are the implications for management practices? Some of the demands will be the following:

Managers of the future will be torn between two very important variables. They are going to be asked to increase the living standards of peoples. There are going to have to be more job opportunities with better pay, which means wealth must be created and jobs must be built. On the other hand, organizations and their managers must couple this with the improvement of the quality of life. They must give the employees a chance to get more satisfaction from their jobs and their lives. This means making jobs more interesting and more meaningful. People from developing nations are going to be pressing hard for a redistribution of wealth and of wealth-creating techniques such as the technology that the western world has.

All managers who are working toward advancement to the manager-ions in an organization must be international in orientation. It doesn't matter if they never leave the United States. If their company or their organization is going to survive in the society we are predicting, people in that organization are going to have to understand such things as the differences between Arabs and Iranians. They are going to have to understand the importance of foreign policy, the difference and value of other languages. Multinational organizations are going to view their overseas and domestic programmes as carefully integrated parts of an overall management pattern. Capital, human resources, and technical resources will be allocated on an international basis.

Those managers who aspire to chief executive positions will have to prepare themselves to be specialists. For instance, the broader of knowledge of technology and the management of human relations will have to be more than it is at the present generalists, I mean the who have a depth of history, literature and arts, culture, language The manager must knowledge of the public opinion, a deep ing of where his compa the fabric of a country is going to have to kno proved human relations the changing attitudes tions of the work for have to deal with prese satisfaction, job enlarge flexible scheduling and opportunity. Employees a much greater voice in decision-making. Already nationals operating in employees on boards of This is becoming true in the United States United Auto Workers their president sitting on of the board of directors Chrysler Corporation. very well be a wave of in the United States.

The manager of the must be externally directed his community, to some top manager aide in his unit and let external affairs take course. He must be tuned government, on people in community, on employee In the United States in the will be lobbying with his meeting face to face with interest groups, such as and environmentalists, about managers of all branch managers as well chief executive in the town. A word of caution inserted at this time. In view, these managers should directly involved in politics ever, they should be radical changes in traditional roles and constraints. They should get into civic munity projects. They known by name by local officials. They should not narily run for political push for legislation, but know who the governments are and how they can help and how they can be helped.

A manager must be open for his organization. All will have to open their secrets to the community particularly true of companies operating in developing countries put up big buildings. Get out of the stacks, but the community knows what they They think of the exploiters, using their low wages and carting to headquarters in New York or Paris. The these companies are going to talk to the people explain that it is not but that it is to their consumers. Top business executives, poor spokesmen for the this is true today in this country, but in the country in the world.

First of all, the future is going to have patent in his specialty is going to have to techniques in marketing, finance and accounting going to have to have greater depth of understanding human beings, human psychology, He is going to have to political science, and economics. He must be a politician. He must be able to learn how to react in bargaining. He must be going to have to be an understanding of the power in bargaining with unions, bargaining with management skills and techniques within groups to get things accomplished. He is going to immerse himself in the and other religions in order to have to understand the through a knowledge of languages, history and

As a result of this it apparent that future is going to be undergoing rigorous and training for executives, schools, companies to prepare these skills. Knowledge of able on a worldwide

The author is president American Graduate School national Management.

The art of working together

In both the abstract and sartorial senses the habit of learning has not traditionally been donned with comfort and enthusiasm by industrial and business leaders in the United Kingdom—certainly not by comparison with those in competitor countries where a much larger proportion of highest ranking managers has customarily profited from the benefits of higher education.

A Department of Industry study in 1971 showed that, while in Britain about 50 per cent of chief executives had a degree, in Sweden the figure was 77 per cent, in West Germany 81 per cent, in France 83 per cent and in Belgium 85 per cent. The expansion of universities and polytechnics and the growth of management education during the past 20 years are, however, already changing the face of boardrooms; and perhaps the first appointment of a business graduate to the top post in a major British company, Mr Christopher Hogg at Courtaulds, is a symbol of future change.

On behalf of industry it is pertinent to recall that, when in 1960 the Foundation for Management Education discussed with Government the subject of university post-graduate management education, the University Grants Committee made it unequivocally clear that, if industry expected Government to fund university business schools and management centres, industry itself must play a major financial part in the start-up stage.

Steps were therefore taken for funds to be raised—in 1963 for some modest pilot projects and then in 1964, after the publication of the Franks report, for the establishment in joint partnership with the UGC of the London and Manchester Business Schools and for developments at several other universities.

During the 1960s Government and FME were aiming for a supply of about 2,000 MBAs a year by the following decade. In fact Britain has now reached an annual yield of only 700 United Kingdom nationals and demand continues to outstrip supply.

Unsatisfactory though these figures are, however, it is important to emphasize that our university management schools and regional management centres (based on polytechnics and colleges within 12 regions of England and Wales) cover a far wider range of activities than postgraduate programmes.

But it is in the increasingly expansion and diverse field of post-experience activities that much of the creative tension and constructive interplay between "management and learning" must lie in the future. Britain is fortunate that our schools and centres have come strongly to appreciate this in the last few years and are probably more advanced in their techniques and interrelationships with client organizations than those in any other country. It is up to industrial and commercial companies, the public services, and government, local and central, to exploit these opportunities.

For it cannot be disputed that our management schools have an enormous potential contribution to make towards improvement in the managing of every sector of our national life. They can contribute first to the development of the individuals within an organization, and second to the work and practices of the organization itself.

It is to the former that most effort and attention has hitherto been given, through the courses and programmes held inside the schools themselves and often now in-company with the help of faculty from the schools. But in recent years a considerable amount of time has been devoted by the academic institutions to the activities and problems of client organizations.

The expansive integrating nature of management education must be emphasized. First, like medicine it is multidisciplinary, bringing together subjects and disciplines which have originally evolved independently. It draws its teaching faculty from a diversity of sources, academic and industrial. Secondly, the nature of the demands made upon it foster and strengthen the ties linking the schools with their client bodies.

Thirdly, the three activities of teaching, research and consultancy will become even more closely related, both in terms of the thrust of the schools and of the needs of industrial and other organizations.

And fourthly, management education is integrative in its relationship with society at large.

In a *THES* article at the end of last year Professor Roy Niblett wrote: "The social and moral consequences of applying so many of the skills that can be learnt are little attended to—even in medicine and surgery, certainly in economics, agricultural science, the managerial arts. Theory and praxis are too often studied in remarkable isolation, and as if this was possible without disaster to both. History is neglected, as if the present could be understood without any real entering into the past. A greater depth and understanding of humanity is what our higher education is so much in need of."

I am glad to say that an increasing number of industrialists and academics are responding by thought and action to the kind of approach to issues which Professor Niblett is invoking. A few years ago.

The late Michael Pocock, chairman of Shell, presided over a small group of businessmen and educationalists who produced a kind of blueprint for the future education and training of European managers, which laid great emphasis upon the non-cognitive or affective aspects of management training and development. And the Pocock report helped to inspire and promote a most imaginative two-year project, by the European Foundation for Management Development.

But with the inevitable emphasis in management schools and centres upon the more immediate needs and problems of industry, these recent activities have so far produced only a limited impact. Although the opportunities for the growth of new developments at the schools are currently circumscribed, some modest further steps could be taken with the enlightened financial help of industry. Those business schools in the United States which have introduced political scientists and business historians into their faculties have received immense benefit from them.

There is in fact much that can be done in this area, and it would moreover happily accord with another aspect of management education—its integral contribution to continuing or life-long education, to the procedural conduct of which more positive attention is at last being paid by the universities.

But let me end by entreating more companies in industry to come closer to the university management schools and regional management centres, in ways which some of them are already applying—by invoking the help of the schools in their industrial relations and other management problems, by opening their doors for research and case studies, by enabling more of their managers to take part in some of the excellent training programmes which are available, and—always important—by assisting them with some of their financial difficulties in a mood of enlightened self-interest.

Philip F. Nind

The author is director of the Foundation for Management Education.

Learning the skill of taking risks

There are two key elements which industry regard as essential in management education: The acquisition of the skill of working with people to achieve results; and the development of the ability to make judgments in a working environment where the priority is to make the most appropriate decision quickly, rather than a "perfect" decision arrived at after extensive theoretical analysis.

The first of these skills is partly acquired by studying behavioural science and industrial relations. Such studies should include an understanding of the complexity of the environment in which industrial relations take place. This requires not only an understanding of the values that this environment represents, but also an appreciation of the pressures applied to people who work in this field. There also needs to be an understanding of the power balance in any industrial relations situation and ways in which power can be used legitimately and how it can be frustrated. This aspect of management education needs to include a practical element and must take place against the background of the world of work if the full potential of this approach to industrial relations were to be realized, then the opportunities which it would present in industry to achieve change would be substantial.

The need to associate practice with theory is equally true of the other essential feature of management education, the development of the skill of making pragmatic judgments. Polytechnics have always accepted that management is a practical process, rather than a wholly scientific one. They hold the view that it is not possible to isolate the variables of a management situation and compare them with a genuine control group. This does not mean that management education should not contain elements of formal teaching in such subjects as labour law, market research and accountancy, but it should also include the teaching of the practice of selling and making decisions on expenditure.

Central to this teaching of practical management is the notion of risk. A detailed knowledge of business subjects is necessary, but not sufficient to develop the skills associated with risk taking. A sound knowledge of these disciplines, together with a firm base of quantitative skills, limit the extent of the risk being taken, but does not eliminate it. Risk taking is not possible best taught by using teachers who are themselves very much involved in business at a senior level and associating the theoretical work with practice in the work place. Many polytechnics have found that an approach to teaching management which involves teachers seconded from industry and commerce, teaching courses on a part-time and sandwich basis, is very much appreciated by industry.

A further point with regard to the subject matter of management education is the need for all managers to command quantitative skills. This does not mean that courses in management require major elements of advanced mathematics. What all managers need to have is an ability to cope with information that is presented to them in quantitative terms and a capacity to deal with concepts involving orders of magnitude.

Apart from these essential features of the curriculum of management education, courses in this field should develop a broad understanding of the various functions of management and how they fit together in a total system. They should also contain elements which lead to an understanding of management as an empirical system for getting things done and an awareness of the importance of the economic and cultural environment within which an enterprise operates. The background of this general education in management courses should also offer the opportunity for an individual to develop a particular skill to the highest level.

This educational approach should normally be pursued at postgraduate level by students who have already had a number of years in industry, in which a skill has been acquired in at least one area of business. The qualities required of managers appropriate to this level of education include not only high intellectual ability, but also the sophistication of thought and capacity for action necessary to apply that ability in very demanding circumstances. Since there are few more important decisions with regard to the nation's wealth-creating activities, than the selection of future senior managers, the selection process for management courses should be carried out with very great care. It follows that it is more important

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Learning the skill of taking risks

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to identify a few excellent graduates capable of meeting the demands of a rigorous high level course in management, rather than to enrol a large number of mediocre performers.

As far as polytechnics are concerned, it is vitally important that they relate their management education to local and national needs and it is therefore essential that every attempt is made to match their output of specialisms with industry's demands. The 12 regional management centres through which most, but not all, management education in polytechnics is carried out are particularly appropriate for this task. These centres were established in March 1971 by the Secretary of State for Education and Science, in order to develop full-time high level work, including postgraduate and post-diploma in management studies courses, to offer as wide a range of courses as possible in order to meet local and regional needs and to act as regional resource centres in the further education system.

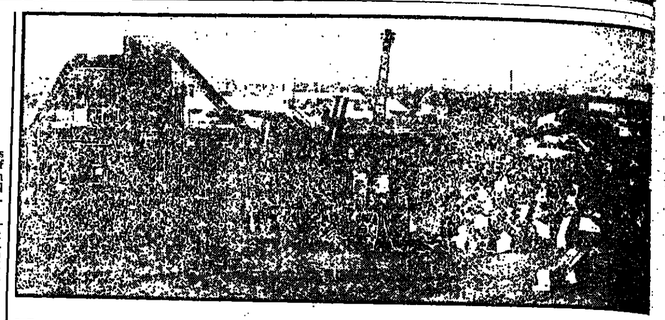
The East Midlands RMC has developed programmes for the public sector, including a centre for a senior management programme for the DHSS, and with other RMCs has developed strong working relationships with local government training agencies. Another very successful unit is the Anglian RMC, which has a large diploma in management studies course with specialist options in manufacture, marketing, human resource management and local government and education. The Kingston RMC two week executive development programme has gained an international reputation, whilst the needs of small businesses has led to the Small Business Advisory Centres within the London, Yorkshire and Humberside, Welsh, North West and South-West RMCs.

A particularly interesting development at Middlesex Polytechnic has been the establishment of a management centre in Freetown on behalf of the University of Sierra Leone, financed by a grant from the World Bank. The unit is staffed by a small group seconded from the polytechnic, which seeks particularly to run a wide range of short courses on management techniques relevant to local and national needs.

It is clear, therefore, that polytechnics have become well established in the field of management education. They must now be prepared to develop further along the lines I have indicated and grasp the opportunities still relatively untrammelled by the traditions of the older institutions of higher education.

R. M. W. Rickett

The author is director of Middlesex Polytechnic.



In the waste-disposal business

The purpose of business schools must be to improve the productivity and performance of industry by training better managers and getting these managers to make better use of their resources.

Examples of wasted resources abound. A new product is launched which fails; unnecessary redundancies take place; factory processes cause environmental pollution and are a cost to the local community.

A reduction in waste does not come about naturally. The spurs of competition are not always sufficient. Without effective action, organizations become less efficient. This is where business schools can stimulate new ideas to improve performance and broaden the perspective of those who must balance the objectives—short and long term, economic and human. The interaction between business and business schools must further this broad purpose. The relationship must result in an improved performance by managers.

Large companies mostly financed the formation of the London and Manchester Business Schools and the relationships are certainly cordial. However not all large companies make use of the schools' facilities. How often do executives from IBM, Ford, BP, Shell or GEC, come on management courses. The truth is that business schools have only a small share of the market.

The bulk of management training is done in-house. Even when the MBAs recruited by large companies are included, the total impact of business schools is small. This is not surprising. There are several sound reasons why large companies do the bulk of their own management development. First of all there is the sheer volume which no one school could cope with. BP has 4,000 first level managers in its head office alone. Then there is the fact that many of the large companies were already running courses before the business schools started. In addition, in-house courses can help in fostering the corporate ethic and corporate identity so important for multinational companies with worldwide operations.

Obviously company staff on in-house courses can be supplemented by consultants and people drawn from business schools on an individual basis. Although large companies recruit many of the MBAs and provide many of the participants on executive courses, this represents only a small part of their management training effort. They have integrated backwards, reducing their costs by picking staff from business schools on an individual basis. This leaves business schools in a weak position.

If the business schools are in a weak position with respect to large companies with their own in-house training programmes, the roles are reversed with respect to medium sized and small companies. In these relationships there is usually no threat of backward integration, and the academic staff are not confronted with managers who may be as knowledgeable as they are. This may be an area for productive development, but as we shall see later, the problem this time is not with the customers but with the suppliers—the academic faculty.

At the level of the one year or two year graduate course, the business community recruits a standard product from the business schools. Technically, the business school sells its product to the incoming graduate, but in practice they come partly because of the value which business places on them, when they graduate. Occasionally firms will sponsor promising young managers to attend these one or two year courses, but the number that are subsequently ready to rejoin their sponsoring company has discouraged firms from this approach. Sponsorship may become more popular if the new part time MBA course, to be launched by the Manchester Business School in October, 1981, is successful. Apart from overcoming the problem of loyalty, the course will enable students to apply what they have learned back in their jobs soon after the learning experience.

Another form of interaction involves companies sending middle or senior managers, whose loyalty is not in doubt, on short courses from between a few days to 12 weeks, or a number of separate sessions over a period of time. Again the sponsoring company is buying a standard product offered by the business school.

After the standard products come the more tailored courses. This is the growth area. It is an inevitable reaction to the forces of backward integration from large companies and the problems of product differentiation between competing schools. It is a healthy trend as it will align academic resources more closely with the needs of business. At Manchester, for example, there is a speciality in banking courses for British bankers and for bankers from developing countries. The school also pioneered joint development activities—project based learning for a group of managers, supervised by the school and the company. At INSEAD in France one year for the main teaching block which is run also graduate programmes and standard courses for managers, there is CEDEP. CEDEP puts on courses to develop the managers from a group of large European companies. Courses at CEDEP are designed specifically for the managers of the participating companies. Likewise CEI in Switzerland and the Oxford Management Centre have close relationships with a limited number of major companies.

Interaction with the business community also takes place in a number of other ways. Members of the faculty act as consultants either individually or in teams. Individual companies or groups of companies may provide scholarships for students or funds for research in particular areas such as the activities of members of the R & D Research Centre at Manchester, or the subscribers to the Euro-Asia Centre at INSEAD. These contributions are something between charitable donations and contract research. The company hopes to create a favourable image, and also hopes to get some specific benefits.

Finally there may be organized interaction at a programme development or policy-making level. Manchester has biannual meetings with its development group committee comprising faculty and management development managers from a spectrum of companies. There is also the biannual meeting of the MBS Council on which is distinguished business executives.

The suppliers, or providers, of business schools are the academic staff. The staff come from a variety of disciplines and each individual wishes to retain his discipline base. This is particularly true for staff at business schools linked to universities where academic traditions determine promotion prospects. Such individuals prefer to work in problems in large companies, to sponsor promising young managers to attend these one or two year courses, but the number that are subsequently ready to rejoin their sponsoring company has discouraged firms from this approach. Sponsorship may become more popular if the new part time MBA course, to be launched by the Manchester Business School in October, 1981, is successful. Apart from overcoming the problem of loyalty, the course will enable students to apply what they have learned back in their jobs soon after the learning experience.

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How 'small' became a religion

Schumacher published *Small is Beautiful* in 1973. Both the title and the content of this book were particularly opportune. They have provided both a clarion call and a catechism for a movement which swept through Britain in the 1970s with the fervour of new and a proselytizing religion; acknowledging no traditional frontiers and erecting some new special idols for worship, of which the "entrepreneur" attracts the most admiration.

The social and economic pervasiveness of the movement has been particularly remarkable. The encouragement of small business is common ground for all three of our main political parties. It is supported by government at both national and local level, by the trade unions, through co-operative movements, and by the Confederation of British Industry, the British Institute of Managers and the Institute of Directors.

There has of course been more systematic and more cautious approval for this new generic, the "small business world" and much of it has come from the field of business and management education. With the ongoing and proper task of guarding, but also advancing the fields of its competence, the management academics would have been unreasonable not to have taken on board so impressive and forceful a movement. Furthermore, by the time Schumacher provided his catechism, the bible had already been in print for two years.

This "bible" was the Bolton report, a Government inquiry into the state of small business in the United Kingdom. It remains the most important document published on the subject. Based on impressive research studies in the late 1960s, it described and deplored the concentration of business activity which had taken place in Britain in the two previous decades. It argued that our economic health depended on a vigorous small business sector, and proposed measures to develop a climate in which new small businesses could start, develop and flourish.

The interest has indeed been generated. Ten years on, the work of academics in the field of small business management has grown from virtually nothing to a respectable and separate subject area dealing with not only the systemised approval already described, but also the generation of new and specialised academic activities.

By 1972, teaching and research was underway at a handful of university business schools and in the last five years 30 or so academics and others in the field have been meeting twice yearly to provide an informal steering group for national activity. From this group has sprung an annual research conference with 100 participants and an annual residential programme for teachers of small business management.

At the London Business school over 80 per cent of the class choose a small business as a core option in their two-year programme and often follow it with additional small business work. The number of business graduates going straight into small businesses is still small. But it appears to be growing.

It is in this area of "advice to the businessman" that the major contribution of management education is seen to lie.

The entrepreneurs have been the subject of study by management academics for many years. But their idolization by the small is beautiful movement has been responsible for a special preoccupation with them in the literature of small business. In recent years the meaning of the word has shifted from a euphemism for a "rough diamond" (or worse) to the description of a mysterious ingredient for small business success which is particularly needed by the founders of businesses.

That the debate about entrepreneurship should have reached this unsatisfactory point is almost certainly the outcome of doubts by academics about the nature and quality of their contribution to small businesses.

I have suggested elsewhere that a transfer of large business management skills to the small business world can often be only marginally helpful, may often be irrelevant, and can occasionally be positively harmful. Managers in large companies work in a predictable environment, where using a range of tried and tested skills and tools, make a useful and regular contribution to improving their regularized social and economic society. But their contact with the unpredictable is irregular and rare. Nor is it an environment for which they are equipped.

The skills and abilities required for success in the unpredictable small business world seem now to have less to do with what we know as management skills, than they did in the earlier years of the decade. Indeed measuring performance along a success/failure spectrum is an alien idea to many small businessmen, who are often well aware that their successes are often not due to their efforts, and their failures are often not their fault.

Recognition of this approach to "failure" and the need to manage it successfully has been the key to much recent government policy to encourage small business growth. For the academics, most of whom have been party to these policies, it has meant a new, more comfortable and certainly more cost-effective stance towards helping small business. By softening the impact of failure and so encouraging starts, the relatively small proportion of successes are also increased.

Since 1978 there has been a growing interest in the shedding by large companies of activities (or potential activities) which they deem irrelevant to their central purposes. It is not of course a new interest. But it has been given new impetus by three recent events. The first was an important speech by the last chairman of Shell who pointed out that most large companies had new product ideas which were low in the queue for action; middle managers who were unlikely to be promoted further, and a potential over-manning problem in many of their sites. He suggested these three problems might be combined to create new small business opportunities which concentrated on new products, re-invigorated tired managers and employed some potentially redundant people.

The second event has been the economic depression. Many companies have been taking hard looks at peripheral and diversionary activities (perhaps providing services or goods) which they would rather "buy in" than make themselves. But unwilling to close down these activities and exacerbate unemployment, and often responding to the initiatives of managers who run them, they are "living them off" into new small businesses.

The third event is symbolic. It was the decision of GEC one of our largest companies to unveil the disbenefits of gigantism, and split into five smaller, albeit still very large companies. Demerger, which describes this activity, is likely to be the least significant for the academics of the new and proactive moves to create new small businesses. But "spin-off", "hive-off" and "management buy outs" are already providing new and lively areas of interest.

They already are posing new problems for management education. For example, are middle managers with 20 years experience in large organizations the best people to run "spun off business"? Are bankers advancing funds on a large company's view of what constitutes a good new small business proposition? There will be many more problems like these; because this "top down" and purposeful approach to new small business creation is predicted to grow rapidly. Indeed it argued that the growth of small business is the most likely significant economic and social outcome of the move of the developed world from an industrial to an information dominated society.

It is not the purpose of the article to argue the rate of that move. But whatever the rate, it is likely that in the coming decade much greater obligations will be placed on management education.

Peter Gorb

The author is director of the Institute of Small Business at the London Business School.

A degree to moderate the gin and tonic

In any broad survey of management qualifications one is struck by the strange and illogical fact that they can without too much difficulty be placed into one of two categories. The first division league requires little argument, and covers the management functions of finance, law, research, production and engineering. The second division leagues consists of marketing/sales management, personnel, purchasing, export, advertising, and public relations.

Today's key management functions are often staffed by people who are for the most part unqualified. And that is not all, if top management has its way, that is how British industry intends to continue in the true spirit of amateurism which has seen us through thick and thin and resulted progressively in us getting thinner and thinner.

One might have thought, for example, that with the difficulty these days of choosing the right employees (coupled with the impossibility of getting rid of them once in place) that at least a token gesture would have been to insist on qualified personnel staff. In export, which most people will concede to be of passing importance to our prosperity, would it not be prudent, if no more, to employ qualified executives? Obviously this line of thought could be developed for each category, but there is one in particular that I would like to highlight and that is advertising and its qualifications.

The term advertising encompasses all persuasive communications functions such as sales promotion, media and public relations. A more accurate term might be marketing communications or even communications practice.

For over 50 years there have been courses and qualifications in advertising initiated by the practitioners themselves and largely administered by them. Thus there has developed vocational qualifications at certificate and diploma levels which have very slowly grown in quality and in their acceptance by the industries they have been designed to serve. They have and do, lack any properly constructed entry base, there is no parallel academic or research activity to support them, there are few educational establishments to teach them, and there are no more than a handful of full-time qualified teachers.

In recent years a number of HNDs have been developed, and it is worth noting that not for the first time, Scotland has led the way with an SHND in communication studies. Additionally the polytechnics in collaboration with the Council for National Academic Awards has inaugurated a number of first degrees dealing with various aspects of communications, albeit at a conceptual level. At the other end of the scale a very interesting A level in communications has been running now for a few years.

A sprinkling of educational acti-

Continued on page 26

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Gin and tonic

Continued from page 25

vities deal with or impinge upon advertising, but they are fragmented, lack a cohesive purpose, and suffer from the limitation of not being significantly noteworthy to produce a ready acceptance, or even serious awareness, by the advertising industry. There is moreover not a single first degree in advertising. The nearest we get to it is in marketing and here it is more often at a relatively superficial level.

Not surprisingly the United States is way out front in quantity, and arguably in quality. At schools of journalism and in business studies, programmes of advertising as a major are to be found at dozens of reputable universities where the subject is taught at both undergraduate level as well as leading directly onto masters degrees and doctorates. The courses are highly practical and tie in actively with the needs of industry and with self-generated research work which provides an increasingly substantial knowledge base leading to a wide range of textbooks, case studies and other educational resources.

In 1979 the International Advertising Association launched a world-wide advertising education programme at three levels of proficiency, all designed to integrate existing national schemes. The next year the International Public Relations Association produced a major discussion document which is now being progressed actively with a view to the setting up of a world-wide fully recognized advanced qualification. So things are happening. It is just a question of whether we want them to happen here.

Expenditures on advertising in Britain are well into the hundreds, even thousands, of million pounds a year, and it has been observed by at least one authority that over half this money is wasted. Top management would not tolerate such a wastage of resources in any other function so why excuse advertising?

The biggest single constraint is to be found among those in industry who hold that advertising cannot be taught, but that what is required is intelligence, creativity, initiative and so on, commonly known by clients as the "gin and tonic" brigade. Such reactionaries see knowledge and personality as mutually exclusive. Coupled with the reluctant industrialists must be even more reluctant academics who do not see advertising as a suitable or even respectable subject for advanced educational establishments.

The real problem is the usual circular one facing the establishment of every new discipline. Employers will accept a really well-founded qualification, for which a thoroughly adequate teaching base is required, backed by an ongoing research programme which in turn needs support from the industry to initiate it and sustain it.

Norman A. Hart

The author is director of the Communication Advertising and Marketing (CAM) Education Foundation and a visiting fellow of Bradford University.

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Getting the right managerial mix

In my experience the practice of defining the ideal person for a job is not very helpful. What frequently emerges is a paragon who either cannot be found or who occupies a post considerably senior to the one described. Nevertheless, there appears to be considerable agreement on the ideal management teacher, both about what they need to offer by way of qualification and ability and also in what activities they get involved. This ideal suggests the need for a triune being.

In respect of qualification and ability, they should have advanced academic knowledge of their subject, considerable practical experience as a manager, and be a good teacher. In respect of what they do, they should teach and do research and consultancy work out in the "real" world of management. (*Figure 1.*)

A major survey *Education for Management* was published in 1972 by Jones et al which identified the extent to which these ideal qualities were present in the population of management teachers. Significant change has occurred in many educational institutions in the last decade, hence it seemed appropriate to collect new data, and to restrict this to five teachers from each institution who had most recently joined the staff.

The intention was to get a snapshot of these most recent additions to the population since they would reflect the current and possibly future trends. All universities and polytechnics who had management departments were sent a questionnaire together with 36 colleges of further and higher education who were members of the United Kingdom Standing Conference of Heads of Management Studies.

Overall the response rate was 55 per cent. The results are shown on the following 3 Venn diagrams in *Figure 2*. The figures are per cent of teachers having various qualities.

"Higher degree" figures represent those teachers who had a higher degree directly relevant to the subject they were teaching. This figure is used as a measure of their *academic knowledge* of their subject. They are significant but not surprising differences in the total figures. (University 82.9 per cent, polytechnic 62.8 per cent, further education colleges 27.8 per cent.)

"Management Experience" figures are those teachers who have had a job as a manager, or have worked in a management function, (e.g. as an accountant). (University 67.2 per cent, polytechnic 93 per cent, further education colleges 82.3 per cent). The ratio of those with previous jobs as managers to those with previous jobs as functional specialist also varied quite markedly. (University 52 :48, polytechnic 77 : 23, further education colleges 66 :34.)

The percentage of teachers having *both*, a relevant higher degree and any sort of management experience show some similarity in the universities and polytechnics (University 52.7 per cent, polytechnic 59.3 per cent, further education colleges 26.5 per cent).

The figures for teaching qualifications include anyone holding a recognized teaching qualification or

TABLE I

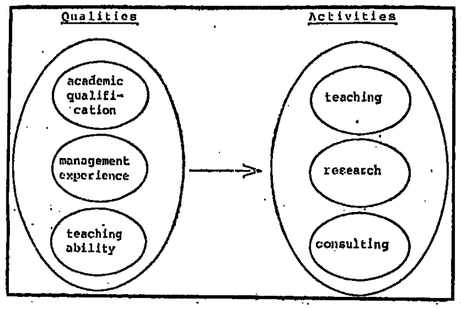

TABLE II

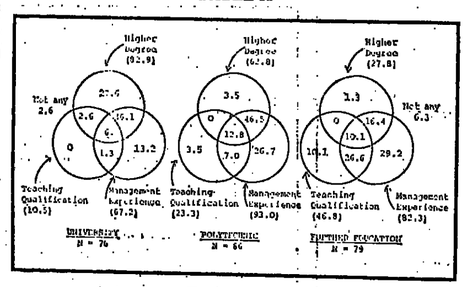

TABLE III

Qualities	Sector	University	Polytechnic	FE College
Higher Degrees	1970	58	7	20†
	1980	83	(63)	46 (28)
Teaching Qualifications	1970	7		35
	1980	11	(23)	35 (47)
Management Experience	1970*	47		51
	1980	67	(93)	88 (82)

† Figures are combined polytechnic/FE colleges
* per cent whose last job was management or management consultancy

who attended the International Teachers Programme. Again there are significant differences between the sectors (university 10.5 per cent, polytechnics 23.3 per cent, further education colleges 46.8 per cent. What is not in general clear from the data is whether these qualifications are based on school, technical or management teaching practices.

The ideal teacher already referred to, who by these measures has a relevant higher degree, a teaching qualification and who has held down management job, actually does exist. The figures (where the three circles overlap in *Figure 2*) are university 6.6 per cent, polytechnic 12.8 per cent, further education colleges 10.1 per cent.

The question as to whether management teachers should come from purely academic or management backgrounds presents a somewhat naive dictotomy. It is not a matter of whether it is better to come from one or the other, but how to combine the qualities derived from both. If a teacher with an "academic background" is defined as someone with a higher degree and no management experience then the sample of recently joined staff showed the following distribution: (*see Figure 2*) university 30.2 per cent, polytechnic 3.5 per cent, further education colleges 4.3 per cent.

A "management background" is defined as someone with management experience but no higher degree relevant to their teaching, although they may possess a higher degree relevant to their management experience, i.e., chemistry, then the corresponding figures are university 14.5 per cent, polytechnic 33.7 per cent, further education colleges 56.8 per cent.

It is interesting that of these people in the further education sector, nearly half were teacher trained, which is high compared with the other two sectors. These figures would appear to reflect current recruiting policy, and the historic background of the institution.

However the "either/or" alternative has serious drawbacks. For the "academic" teacher the problem is how relevant theoretical knowledge is to the "real" world in which he manages operates. This may be ameliorated to some extent if the teacher has achieved a higher degree by research involving investigation of some management situation. This may give great insight and in-depth knowledge of a very small part of the field.

Higher degrees by research also provide an apprenticeship as a researcher, which enables the teacher to perform the research role already referred to and also the role of supervisor to management students who wish to get higher degrees by research. Both these roles can be seen as part of the more fundamental role of "knowledge generation" which is often reinforced by the reward system. For example promotion based on research grants acquired, publications etc.

These are of course the hollowed traditions of academia, but some would and have argued that what management needs, is to know how to apply knowledge not generate it. This does not imply that academic institutions are not thought to be proper places to do research and generate knowledge, but that additionally management teachers should be able to teach managers how to apply knowledge in such a way as to enable them to behave more effectively in their work situation.

This view may be predominantly a management one, and may raise fundamental issues about the vocational nature of management education. Such a view however extends the role of a teacher into understanding the application of knowledge as well as its generation. It is to this area that the "academic" teacher may find the most difficulty and be least effective.

If we consider "management based" teachers, there are problems. Their knowledge of management may be by no means very broad but relatively superficial. In explaining how people learn from practical experience Kolb in *Theories of Group Process* has suggested four processes which are needed to complete a learning cycle.

After the actual experience, reflective observation" is the process by which the result or outcome of some action is noted. This is then to be followed in Kolb's model by "abstract conceptualisation", that is by forming some theory or concept which provides some interpretation of the experience or some lasting generalization.

Teachers with management experience only, may have had the experience but may have difficulty in conceptualising it, possibly enough to teach, or to draw any generalisation from it. They may also not easily be able to relate this to a body of knowledge derived from research partly because they may not be aware of such work but also because the gap between research findings and his experience may be too difficult to bridge.

Thus such teachers find a difficulty in identifying management problems or drawing on experience. This may fall short of levels of scholarship required in academic qualification and raise the question of whether having a experience can ever be more than over simplified prescription for success, or anecdotal description of practice which worked in one specific situation and is not generalisable.

The reasoning behind the ideal model (Figure 1) of a management teacher now becomes more apparent and a more precise definition of the three components can be attempted. Academic qualification may be seen to embody two components:

- Research ability to build a legitimate role of knowledge generation and research supervision. It should include the ability to write on topics and produce publications which are seen as relevant and usable by managers;
- Scholarship which gives the teacher a broad knowledge of management theory and practice, and the application of one to the other.

Management experience needs to have been conceptualised and generalised to some extent and reflected in the light of available theory. This experience is also needed to add a vital dimension of credibility to the teacher when interacting with management people.

Teaching ability has some specific and possibly unique characteristics:

- The need to understand and use the relevant body of knowledge in theory, but to understand how it can be applied in the management situation. The teacher also needs to be able to facilitate learning of this type;
- Since management education is vocational in character some development is often required. I would submit that this is a range of teaching skills which is different from those required in the acquisition of knowledge;
- Again since management education is much interaction with people active learning is also often an important element of management education. Again, particular teaching skills are required to facilitate such learning.

Overall since managers are presumably mature, reasonably intelligent people, "facilitating of learning" may be a more appropriate description than "teaching". The relevance of these qualities will be influenced by the role of the institution and hopefully by the needs of the management students.

Don S. Binsted

The author is director of the Centre for Study of Management and Organizational Sciences.

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Universities

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Applications are invited for the following posts :

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Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Registrar, University of the South Pacific, PO Box 1168, Suva, Fiji, to arrive no later than February 27, 1981. Applicants resident in UK should also send one copy to Inter-Universities Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

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(4) Four Professors/Associate Professors/Senior Lecturers/Lecturers in Heat Engines.
(5) Professor/Associate Professor/Senior Lecturer in Materials Technology.

Department of Civil Engineering

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(2) Senior Lecturer/Lecturer in Structural Engineering.
(3) Two Senior Lecturers/Lecturers in Surveying.
(4) Two Professors/Associate Professors/Senior Lecturers/Lecturers in Highway Engineering.
(5) Senior Lecturer/Lecturer in Construction Management.

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Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Chief Academic Officer, University of Dar es Salaam, PO Box 35091, Dar es Salaam, Tanzania, to arrive no later than February 24, 1981. Applicants resident in United Kingdom should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF DAR ES SALAAM TANZANIA

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Universities continued

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Applications are invited for the following posts:—

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(2) LECTURERS IN CHEMISTRY (Post 80/96)

Posts are available in the fields of Organic, Physical/Inorganic, and Analytical Chemistry. Applicants should possess postgraduate qualifications, normally including a PhD, and should have had teaching and research experience at university level. Research interests should be compatible with the economic development of the Region, and could involve projects carried out on an inter-disciplinary basis within the School of Natural Resources. The appointments are tenable from March, 1981.

Salary scales: Senior Lecturer F$43,237 to 15,606 per annum; Lecturer F$9,169 to 12,432 per annum (£1 sterling equals F$1.89). The University has a small number of positions within its establishment for which the British Government provides supplementation payments. The present posts carry no such benefits and are offered on local terms and conditions only. Gratuity; appointment allowance; low rental, partly-furnished accommodation; allowance in lieu of superannuation. Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Registrar, University of the South Pacific, PO Box 1168, Suva, Fiji, to arrive no later than February 27, 1981. Applicants resident in UK should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF DAR ES SALAAM TANZANIA

Applications are invited for the post of SENIOR LECTURER/LECTURER IN HISTORY. Candidates should hold a Ph.D. in European History or an M.A. with emphasis on European History with university teaching experience. Ability to teach American or West African and South African History is desirable. Appointee will be expected to teach European History together with American or South and West African history. Salary scales: Senior Lecturer Tz.Sh. 39,500-68,750 p.a.; Lecturer Tz.Sh. 31,080-37,080 p.a. Appointees on expatriate terms will be entitled to an Expatriation Allowance of 30 per cent of their basic salaries (£1 sterling=Tz.Sh. 19.40). Family passages; F.S.S.U.; biennial overseas leave. Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Chief Academic Officer, University of Dar es Salaam, P.O. Box 35091, Dar es Salaam, Tanzania, to arrive no later than February 24, 1981. Applicants resident in United Kingdom should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF DAR ES SALAAM TANZANIA

Applications are invited for the post of SENIOR LECTURER/LECTURER IN FOREIGN LANGUAGE AND LINGUISTICS. Applicants should have postgraduate qualifications in Applied Linguistics and/or Teaching English as a Second Language. A higher degree in English or Languages or Linguistics would be an added advantage. Appointee will be required to teach courses in Applied Linguistics and English Language and to participate fully in the preparation of syllabuses and teaching/study materials for Teachers of English as a Second or Foreign Language. Salary scales: Senior Lecturer Tz.Sh. 39,500-68,750 p.a.; Lecturer Tz.Sh. 31,080-37,080 p.a.; Assistant Lecturer Tz.Sh. 24,840-31,080 p.a. (£1 sterling equals Tz.Sh. 19.40). Appointees on expatriate terms will be entitled to an Expatriation Allowance of 30% of their basic salaries, Family passages; F.S.S.U.; biennial overseas leave. Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Chief Academic Officer, University of Dar es Salaam, P.O. Box 35091, Dar es Salaam, Tanzania, to arrive no later than February 24, 1981. Applicants resident in United Kingdom should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF DAR ES SALAAM TANZANIA

Applications are invited for the post of SENIOR LECTURER/LECTURER IN HISTORY. Candidates should hold a Ph.D. in European History or an M.A. with emphasis on European History with university teaching experience. Ability to teach American or West African and South African History is desirable. Appointee will be expected to teach European History together with American or South and West African history. Salary scales: Senior Lecturer Tz.Sh. 39,500-68,750 p.a.; Lecturer Tz.Sh. 31,080-37,080 p.a. (£1 sterling=Tz.Sh. 19.40). Appointees on expatriate terms will be entitled to an Expatriation Allowance of 30% of their basic salaries, Family passages; F.S.S.U.; biennial overseas leave. Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Chief Academic Officer, University of Dar es Salaam, P.O. Box 35091, Dar es Salaam, Tanzania, to arrive no later than February 24, 1981. Applicants resident in United Kingdom should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF SWAZILAND

Applications are invited for the posts of

SENIOR LECTURER and TWO LECTURERS IN MATHEMATICS

tenable from August, 1981. Candidates for the Senior Lectureship should hold a Ph.D. in Mathematics, Applied Mathematics or Computing Science, have considerable experience in teaching at undergraduate level and the ability to carry out independent research. Candidates for the post of Lecturer should hold a higher degree in Mathematics, Applied Mathematics or Computing Science. The appointees will teach undergraduate courses in Analysis, Differential Equations, Algebra, Geometry and Computing Science. Salary scales: Senior Lecturer E8,100-E10,620 pa (£1 sterling=E1.80). Lecturer E6,720-E8,820 pa (£1 sterling=E1.80). In very exceptional circumstances, the British Government may provide salary supplementation in range E2,490-E5,028 pa (£ sterling) (reviewed annually—normally tax-free) and associated benefits. Two or four-year contract; gratuity in lieu of superannuation; inducement allowance payable to those not qualifying for supplementation; education allowance; medical scheme; accommodation at reasonable rental; family passages; biennial leave. Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Registrar, University of Swaziland, Private Bag, Kwaluseni, Swaziland, to arrive not later than February 27, 1981. Applicants resident in UK should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF THE SOUTH PACIFIC

Applications are invited for the post of :—

LECTURER IN HOME ECONOMICS (Post 81/3)

Applicants should hold degree qualifications or equivalent in Home Economics or Textile Science and Clothing Design. Preference will be given to those who will be able to teach in any one of the two above areas to an advanced level, and one other from the following areas: Home Management, Health, Child and Infant Care (or Child Development), Family in the South Pacific, within the Diploma and/or BEd programme. Experience in teaching at tertiary level in a developing country would be an advantage. The appointee will be expected to share fully in all facets of work within the Home Economics Department. Salary scale: F$9,169 to 12,432 per annum, (£1 sterling equals F$1.89). The University has a small number of positions within its establishment for which the British Government provides supplementation payments. The present post carries such benefits and is offered on local terms and conditions only. Gratuity; appointment allowance; Government-furnished, partly-furnished accommodation; allowance in lieu of superannuation.

Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Assistant Secretary, Box 4820, University of the South Pacific, PO Box 1168, Suva, Fiji, to arrive no later than February 27, 1981. Applicants resident in UK should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF PAPUA NEW GUINEA

Applications are invited for the post of SENIOR LECTURER/LECTURER IN POLITICAL AND ADMINISTRATIVE STUDIES.

Applicants must have expertise in Administrative Studies. A PhD is essential for Senior Lecturer level, and an MA is desirable for Lecturer level. Applicants should have a good record of undergraduate teaching and research and should have expertise in one or more of the following: public administration; development administration; public policy; organization theory; planning. The appointee will be required to teach an introductory course in public administration. Experience in a third world country and an interest in development studies would be an advantage. Further information on the Department can be obtained from the Chairman of Political and Administrative Studies at the University. Salaries: Senior Lecturer K17,125 per annum, Lecturer Grade II K15,275 per annum, Lecturer Grade I K13,425 per annum (£1 sterling equals K1.54). Gratuity; three-year contract; support for approved research; rent-free accommodation; family passages; baggage allowance; leave fares after 18 months' service; education subsidies; salary continuation scheme for extended illness or disability. Applicants who wish to arrange secondment from their present institutions will be welcomed.

Detailed applications (two copies), including a curriculum vitae, a recent small photograph, and naming three referees, should be sent to the Assistant Secretary, Box 4820, University of PO, Papua New Guinea, to arrive no later than March 3, 1981. Applicants resident in UK should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF STRATHCLYDE

Applications are invited for a

COMPUTING OFFICER

vacancy in the new MICRO-PROCESSOR UNIT in the COMPUTER CENTRE. Applicants should hold a degree or equivalent qualification. The Unit provides specialised development facilities and gives assistance to any member of the University who wishes to use a microprocessor for any purpose. It has expertise in both hardware and software, but the post being advertised now will be involved primarily with software development.

Appointment will be on Grade IA of the national salary structure for other related staff. Salary scale £5,505-£9,595 per annum (under review) with placing according to age, qualifications and experience. Superannuation benefits.

Application forms and further particulars (quoting 6/81) and enclosing a self-addressed label, size (9in. x 4in.) may be obtained from the Academic Appointments Officer, University of Strathclyde, Royal College Building, 204 George Street, Glasgow G1 1XW, with whom applications should be lodged by February 28, 1981.

UNIVERSITY OF KENT Canterbury

FACULTY OF HUMANITIES

Applications are invited for appointments to lectureships in Classics, tenable from 1 October 1981. Candidates should have a thorough knowledge of classical literature and language, and a specialism in Greek literature, Greek history, Latin literature or Latin history. The appointees will be required to undertake undergraduate teaching in Classical Civilisation and under-graduate and postgraduate supervision. Salary scale £5,505-£11,595 per annum. Superannuation scheme. Application forms and further particulars may be obtained from the Registrar, The University, Canterbury, Kent CT2 7NZ, to whom applications should be sent not later than February 27, 1981. Quote reference 1/81/T.

LAMPETER UNIVERSITY OF WALES SAINTS DAVID'S UNIVERSITY COLLEGE

LECTURER IN ARCHAEOLOGY

Applications are invited for the post of Lecturer in Archaeology tenable from 1 October 1981. Preference will be given to candidates with interests in the Roman period. Salary scale £5,505-£11,595 per annum (£1 sterling=£1.80). Superannuation scheme.

The appointment is made within the University of Wales grading of Lecturer Grade II (£5,505-£9,675), Lecturer Grade I (£7,125-£11,595) or Senior Lecturer (£9,675-£11,595) according to qualifications and experience.

Further particulars and application forms from the Registrar, St. David's University College, Lampeter, Dyfed, to whom completed applications should be returned by the closing date: 1 February 1981.

LANCASTER THE UNIVERSITY

TEMPORARY LECTURERS IN CLASSICS

The University of Lancaster invites applications for TEMPORARY LECTURESHIPS in CLASSICS for the academic year 1981-82. The successful candidates will be made responsible for teaching in the Department of Classical Studies, tenable for one year from 1 October 1981 (or such later date as may be agreed). Salary will be on the scale £5,505 to £9,675 per annum, according to qualifications and experience. Applications (two copies) should be sent by 20 February 1981 to the Registrar, University of Lancaster, Bailrigg, Lancaster LA1 4YW, from whom further details may be obtained.

BRISTOL THE UNIVERSITY

CHAIR IN ADULT EDUCATION AND DIRECTORSHIP OF THE DEPARTMENT OF EXTRA-MURAL STUDIES

The University proposes to make an appointment to the Chair of Adult Education and the Directorship of the Department of Extra-Mural Studies which will become vacant on 31 July 1981, on the retirement of Professor C. Cunliffe.

Suitably qualified candidates are invited to submit applications. Further particulars of the appointment may be obtained from the Registrar and Secretary of the University, 83 Woodland Road, Bristol BS8 1TH.

DURHAM THE UNIVERSITY

LECTURESHIP IN MUSIC

Applications are invited for a post of Lecturer in Music from 1 October 1981. It is hoped to appoint a person with a special interest in original composition and in teaching composition and the history of graduate and undergraduate levels.

The initial salary will be on appropriate point on the scale (£5,505-£9,675 per annum) together with normal London allowance.

Applications (three copies), together with the names of three referees, should be submitted not later than Wednesday, 25 February 1981 to the Registrar and Secretary, Old Shire Hall, Durham DH1 3HP, from whom further particulars may be obtained.

UNIVERSITY COLLEGE, BOTSWANA

Applications are invited for the post of

LECTURER IN ENGLISH LITERATURE

Candidates should have an Honours degree in English with a Masters degree in Seventeenth/Nineteenth Century literature. An interest in African literature would be an advantage. Salary scale: P7,212-11,604 p.a. (£1 sterling=P1.78). In very exceptional circumstances, the British Government may provide salary supplementation in range £1,568-4,874 p.a. (sterling) (reviewed annually—normally tax-free) and associated benefits. Contract addition; family passages; gratuity; baggage allowance. Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Registrar, University College Botswana, Private Bag 0022, Gaborone, Botswana, to arrive not later than 27 February 1981. Applicants resident in UK should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

DUNDEE THE UNIVERSITY

CHAIR OF MODERN LANGUAGES

Re-advertisement

Applications, from students with appropriate qualifications, are invited for the Chair of Modern Languages which will become vacant on the retirement of Professor J. Lawrence Walker on 30 September 1981. Applications should be submitted by candidates not later than 20 February 1981 to the Secretary to the University, The University, Dundee DD1 4HN, with whom applications may be lodged. Further particulars may be obtained from the Secretary. Please quote reference 207/T.

UNIVERSITY OF STRATHCLYDE

Applications are invited for a post of Lecturer in Music from 1 October 1981. It is hoped to appoint a person with a special interest in teaching composition and in teaching composition and the history of graduate and undergraduate levels.

The initial salary will be on appropriate point on the scale (£5,505-£9,675 per annum) together with normal London allowance.

Applications (three copies), together with the names of three referees, should be submitted not later than Wednesday, 25 February 1981 to the Registrar and Secretary, Old Shire Hall, Durham DH1 3HP, from whom further particulars may be obtained.

UNIVERSITY COLLEGE OF SWAZILAND

Applications are invited for two posts of

LECTURER IN LAW

in the Department of Law, tenable from August, 1981. Applicants should have a minimum of an LL.B. as a postgraduate degree. Work experience in either Law teaching or practice will be an added advantage. Duties of appointee include teaching and supervising undergraduates and research into local law, plus other duties as may be assigned. Salary scale: E6,720-E8,820 pa (£1 sterling=E1.80). In very exceptional circumstances, the British Government may provide salary supplementation in the range £2,490-£5,028 pa (sterling) (reviewed annually—normally tax-free) and associated benefits. Two or four-year contract; gratuity in lieu of superannuation; inducement allowance for those not qualifying for supplementation. Detailed applications (two copies), including a curriculum vitae and naming three referees, should be sent to the Registrar, University College of Swaziland, Private Bag, Kwaluseni, Swaziland, to arrive not later than 27 February, 1981. Applicants resident in UK should also send one copy to Inter-University Council, 90/91 Tottenham Court Road, London W1P 0DT. Further details are available from either address.

UNIVERSITY OF CAMBRIDGE THE UNIVERSITY

DEPARTMENT OF ENGINEERING

ASSISTANT LECTURESHIP IN ELECTRICAL ENGINEERING/ELECTRONICS

Applications are invited for a University Assistant Lectureship in Engineering tenable from 1 October 1981 or as soon as possible thereafter. Applicants should have a first or upper second class honours degree in Engineering or Physics and preferably a research degree or equivalent experience. Salary scale £5,505-£9,675 per annum. Superannuation scheme. Applications (four copies) should be sent by 20 February 1981 to the Secretary, Department of Engineering, Trumpington Street, Cambridge CB2 1PZ, from whom further particulars may be obtained.

HULL THE UNIVERSITY

AUDIO-VISUAL CENTRE

TEMPORARY FLOOR MANAGER

FLOOR MANAGER, male or female, required to work in television service which produces programmes for the University by using both electronic and film techniques in the studio and on location.

The post is temporary for one year beginning on 1 April 1981. Salary £4,995 per month.

Suitably qualified candidates should have an interest in educational or related media and preferably experience in the professional field.

Applications giving details of age, qualifications and experience, together with the names of two referees, should be sent to the Director, Audio-Visual Centre, The University, Hull HU6 7RX, with whom further particulars may be obtained. Closing date for applications: 20 February 1981.

UNIVERSITY OF LONDON UNIVERSITY COLLEGE DEPARTMENT OF PSYCHOLOGY

Applications are invited for two posts in the Department of PSYCHOLOGY and POLITICAL ECONOMY tenable from 1 October 1981. It is hoped to appoint a person with an interest in research and teaching in the second post will be in the broad area of Psychology and Psychobiology. The teaching responsibilities of the second post will include courses for Students in the Faculty of Economics which is run jointly by the London School of Economics and University College. Applicants should have a good academic record, preferably supported by publications, especially those with an experimental orientation.

Initial salary will be on a scale £5,505-£9,675 per annum according to experience and qualifications, with the possibility of giving the names of two referees about whom we may approach, to Dr. A. Gale, Department of Psychology, University College London, Gower Street, London WC1E 6BT, from whom further particulars may be obtained.

Closing date: 28 February 1981.

LONDON IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY (University of London)

DEPARTMENT OF COMPUTING

RESEARCH ASSISTANT

Applications are invited for the above post on a SERC Research Grant entitled "Development of Computer Techniques for Interpretation of Seismic Data". Applicants should be graduates in Computing or Mathematics and should have a good knowledge of numerical analysis and computer programming. Experience in the use of graphics would be an advantage. Salary will be in the range £5,505 to £9,675 per annum (under review) according to qualifications and experience. Application forms may be obtained from the Staff Appointments Officer, Imperial College, London SW7 2AZ, quoting reference number 1/81/T. The closing date for applications is 27th February, 1981.

LONDON THE UNIVERSITY

TEMPORARY LECTURERS IN CLASSICS

The University of London invites applications for TEMPORARY LECTURESHIPS in CLASSICS for the academic year 1981-82. The successful candidates will be made responsible for teaching in the Department of Classical Studies, tenable for one year from 1 October 1981 (or such later date as may be agreed). Salary will be on the scale £5,505 to £9,675 per annum, according to qualifications and experience. Applications (two copies) should be sent by 20 February 1981 to the Registrar, University of London, Senate House, London WC1E 7HU, from whom further details may be obtained.

LONDON THE UNIVERSITY

WESTFIELD COLLEGE

LECTURESHIP IN FRENCH

Applications are invited for a Lectureship in French, tenable from October 1981 or the appointment will be made on the minimum point of the scale for Lecturer Grade I (£6,675 plus £600 London Weighting Allowance).

Preference will be given to a candidate with specialized interest in the French language, literature or thought.

Applications (six copies) should be sent by February 20, 1981 to the Secretary, Westfield College, Kidderpore Avenue, Hampstead, London NW3 7ST, from whom further details may be obtained.

MANCHESTER THE UNIVERSITY

LECTURER IN EDUCATION (MATHEMATICS)

Applications invited from graduates with good teaching experience for this post with special reference to the teaching of Mathematics in schools. A higher degree in Education would be a strong recommendation. The appointee will work mainly on initial training courses for graduates.

Starting date October 1, 1981. Salary range per annum £5,505 to £11,595. Superannuation.

Particulars and application forms obtainable by telephoning the Registrar, 061-273 3333 (24 hour answering service). Please quote reference 4057/80/TES.

UMIST

DIRECTOR OF MID-CAREER TRAINING

UMIST has for many years successfully organised imaginative and effective training and retraining courses for graduates in all disciplines in recognition of the rapidly increasing need for wide variety of such courses ranging from a few days to three months, and for the development of a modular scheme of appropriately high level of special interest to graduates. UMIST now creates a new post at a level equivalent to Senior Lecturer to give the necessary impetus to rapid expansion in this area. Applicants should have a good academic background, a sound knowledge of industry and its requirements, a deep interest in this type of education and an abundance of the kind of drive and enthusiasm which inspires others. The post will be located in the Department of the Secretary and Registrar, whose small group of experienced supporting staff is already in effective operation and eager to respond to the stimulating leadership which they expect the Director to provide. The Principal of the Institute will take a personal and continuing interest in the success of this appointment.

Salary will be on the scale £11,165 to £13,960 per annum (under review). The salary offered to a successful candidate will depend upon his calibre and potential may considerably exceed the minimum.

Requests for application forms and further particulars, quoting reference 81/5/TES, should be addressed to the Registrar, The UMIST, P.O. Box 88, Manchester, M60 1QD. The closing date is February 27, 1981.

SOUTHAMPTON THE UNIVERSITY

NUMERICAL ANALYST

Applications are invited for the post of NUMERICAL ANALYST within the University's Computing Service. The successful applicant will give a supporting advisory service on computer users in numerical methods as applied to the fields of engineering and applied science, and in the techniques of mathematical model building.

The university has access to very powerful computing facilities and a wide range of differing machine architectures. The applicants will be necessary impetus to rapid expansion in this area. Applicants should have a good academic background, a sound knowledge of industry and its requirements, a deep interest in this type of education and an abundance of the kind of drive and enthusiasm which inspires others. The post will be located in the Department of the Secretary and Registrar, whose small group of experienced supporting staff is already in effective operation and eager to respond to the stimulating leadership which they expect the Director to provide. The Principal of the Institute will take a personal and continuing interest in the success of this appointment.

Salary will be on the scale £11,165 to £13,960 per annum (under review). The salary offered to a successful candidate will depend upon his calibre and potential may considerably exceed the minimum.

Requests for application forms and further particulars, quoting reference 81/5/TES, should be addressed to the Registrar, The UMIST, P.O. Box 88, Manchester, M60 1QD. The closing date is February 27, 1981.

SOUTHAMPTON THE UNIVERSITY

CHAIR IN ARCHAEOLOGY

Applications are invited for the Chair of Archaeology which will become vacant on 1 September. Professor Barry Cunliffe has been appointed to a Chair in the University of Oxford.

Further particulars are available from the Secretary and Registrar, The University, Southampton SO9 5NH and applications (one copy) from candidates overseas should be received by 20 February. Applications should be submitted by MARCH 1981.

ST ANDREWS THE UNIVERSITY

DEPARTMENT OF ECONOMICS

Applications are invited for a Temporary Lectureship in MICRO or INDUSTRIAL ECONOMICS tenable from September/October 1981 to September 1982.

Salary on appropriate point on scale £5,505-£9,675 per annum plus USS. It is possible that the initial appointment will be made for a longer than the full period if the possibility of an appointment higher up the scale is not considered.

Applications (two copies) preferably in typescript with the names of three referees should be lodged by 20th February 1981 with the Establishments Officer, The University, College Gate, St. Andrews, Fife, KY16 9AJ, from whom further particulars may be obtained.

UMIST

CHAIR IN MECHANICAL ENGINEERING

A Professorial vacancy exists in the Department as a consequence of the impending retirement of Professor Sir Sydney Ohl. It is anticipated that the successful candidate will be a person with a proven research record and who is committed to the development of teaching in the broad area of Dynamics, which is one of the four divisions in the Department. The Department is one of UMIST's larger ones, with undergraduate and postgraduate numbers in excess of 1,000. Close contact with industry is actively maintained and successful collaboration with industry.

The new Professor will be expected to develop his own ideas about what the Department's research should be. Applicants should be prepared to take a leading part in the direction process if candidates of the right calibre are not available

Overseas continued

leiden

State University of Leiden

Applicants are invited for

a. The Chair of General Linguistics (M/F)

(vacancy number 0-407/2570)

The appointee is expected :
—to do teaching and research in the field of general linguistics;
—to stimulate and coordinate the research within the department concerned;
—to fulfil functions in administration.
Candidates should have a thorough knowledge of the most important theories in the field of general linguistics. Applicants whose work has not been directly concerned with non-Indo-European languages should be able to work with linguists working in that field.

b. The Chair of Theory of Literature and of Literary Criticism (M/F)

(vacancy number 0-408/2570)

The person appointed will be required :
—to do teaching and research in the fields of theory of literature and literary criticism;
—to stimulate and coordinate the research within the department concerned, and the relations with other departments both in teaching and research;
—to fulfil functions in administration.
The person appointed will be required :
—in possess a thorough knowledge of the major schools and currents in the theory and criticism of literature;
—to have an interest in historical developments of literature and of literary theory and criticism;
approach of literary texts.
Foreign candidates are expected to learn Dutch within a short time. The successful candidate is expected —to bring out—especially in his/her teaching—the interrelation between the theoretical and the practical
to live in or near Leiden.
Requests for further information, recommendations and applications (together with curriculum vitae, a list of publications and a survey of current research) should be submitted within four weeks of the appearance of this advertisement to the following address : De dekaan van de faculteit der letteren, faculteitsbureau, Rapenburg 73, 2311 GJ Leiden, Holland.

University of Petroleum & Minerals
Dhahran, Saudi Arabia

English Language Center

The University of Petroleum and Minerals, Dhahran, Saudi Arabia, invites applications for TESL positions for the academic year 1981-1982, starting 1 September 1981:

QUALIFICATIONS:
MA TESL/Applied Linguistics or MA in TEFL or TESL or Post-Graduate Diploma in TEFL or TESL or Post-Graduate Diploma/Certificate in Education (modern languages).

EXPERIENCE:
Minimum two years teaching experience in TEFL/TESL.

DESCRIPTION OF DUTIES:
Teaching English to post-secondary school students with elementary to intermediate proficiency at the University of Petroleum & Minerals.

Minimum regular contract for two years, renewable. Competitive salaries and allowances. Air conditioned and furnished housing provided, or in lieu transportation to and from Dhahran each year. Attractive educational assistance grants for school-age dependent children. All earned income without Saudi taxes. Ten months duty each year with two months vacation with salary. There is also possibility of selection for University's ongoing Summer program with good additional compensation.

Apply with complete resume on academic and professional background, list of references and with copies of transcripts and degrees, including personal data, such as home and office addresses, telephone numbers & family status to: Dean of Faculty & Personnel Affairs, University of Petroleum & Minerals, P.O. Box 144, Dhahran International Airport, Dhahran, Saudi Arabia.

KELVIN GROVE COLLEGE OF ADVANCED EDUCATION
BRISBANE, AUSTRALIA

Lecturer in Social and Behavioural Psychology

Ref. No. 81/A/1

The successful applicant will be required to teach courses in social and behavioural psychology and to apply these areas to the treatment of persons in residential care/welfare services. They will be required to supervise students during their practicum placements in a wide variety of welfare agencies.
Qualifications :
1. A degree, preferably at Master's level or higher in the behavioural sciences with major studies in social or behavioural psychology.
2. Successful teaching experience in a tertiary institution.
3. Experience in the fields of residential care or welfare services.
4. A demonstrated ability to supervise students in practical teaching/learning settings.

The above position will be available as either a tenured or contract basis and will be available for occupancy after 1st August, 1981.
The salary and conditions of service are those applicable to Colleges of Advanced Education in Queensland. Dependent upon the qualifications and experience of the successful applicant, an appointment will be negotiated within the following salary ranges :

Lecturer III	A$15,901-A$16,218
Lecturer II	A$16,446-A$21,566
Lecturer I	A$21,560-A$24,235

Applications quoting reference number, stating full personal particulars, qualifications and experience, including a list of publications and names and addresses of three referees should be forwarded to the Registrar, Kelvin Grove College of Advanced Education, Victoria Park Road, Kelvin Grove, Q. 4059, Australia.
Applications close one month after publication date.
Further information and applications forms (if required) are available on request.
N. C. Cooper, Registrar

UCG Coláiste na hOllscoile Gaillimh
UNIVERSITY COLLEGE GALWAY

UNIVERSITY COLLEGE, GALWAY, IRELAND

LECTURESHIPS IN MECHANICAL ENGINEERING
(2 POSTS)

As part of a Government funded programme to increase the supply of graduates in certain areas of Irish industry, the College has undertaken a major expansion in its engineering programme. Applications are now invited for the above statutory posts from academically qualified candidates with appropriate industrial or research experience. Duties will include the teaching of courses to B.E., B. Tech. and post-graduate levels while conducting an active research programme and developing industrial and other sponsorship of that research. Details of the Departments currently funded research projects available to applicants.
Salary scale (under review) : IR£10,846 x (7)+IR£15,067 p.a.
Interview and relocation expenses payable in overseas applicants. Closing date for receipt of applications *20th March, 1981*. Further information may be obtained from the Registrar, University College, Galway, Ireland.

NATIONAL UNIVERSITY OF SINGAPORE
DEPARTMENT OF JAPANESE STUDIES

Applications are invited for appointment to the following posts in the Department of Japanese Studies from candidates who should possess a PhD degree or equivalent :

(1) Lecturer/Senior Lecturer/Associate Professor in Japanese History—candidates must have a knowledge of the Japanese language, and be able to teach 19th and/or 20th Century Japanese History. Candidates with a knowledge of modern Japanese economic history will have an advantage.

(2) Lecturer/Senior Lecturer/Associate Professor in Japanese Literature—candidates should have a degree in Linguistics with a focus on the Japanese Language. Candidates with experience in teaching basic courses in Japanese, i.e., English and/or Malay to Japanese will be preferred.

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For appointment at very senior level, short-term contract may be offered. Additional benefits will include local transport and children's educational allowance (US$1.00=S$2.09 approx.).

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REMINDER
Copy for classified advertisements in the T.H.E.S. should arrive not later than 10.00 a.m. Monday preceding the date of publication

Union view

Where there's political will there's a way

I suppose I'm pretty useless according to prevailing government thinking on education. My academic career has been the sort of thing that junior education minister Rhodes Boyson seems to have in mind when he makes pronouncements about what students should not be doing.

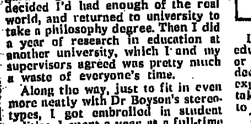
At school I always opted for "unproductive" subjects like English or Latin, and I could never really tell one end of a bunsen-burner from another. I did a year of a Latin degree at Manchester University, and then dropped out for a year to see what the real world was all about. After a year of gardening and casual office jobs, I decided I'd had enough of the real world, and returned to university to take a philosophy degree. Then I did a year of research in education at another university, which I and my supervisors agreed was pretty much a waste of everyone's time.

Along the way, just to fit in even more neatly with Dr Boyson's stereotypes, I got embroiled in student politics. I spent a year as a full-time elected officer in my student union, and then moved up the hierarchy of the National Union of Students to become full-time vice-president (education). People seem to think I'm reasonably well-suited to do this, though I doubt that my philosophy degree did much to get me elected, but my career prospects beyond NUS are not clear.

Naturally, I often wonder what my academic career, which is by no means untypical, was all about. What do I and a fair proportion of my generation of students represent? Are we the scroungers and idlers that Dr Boyson and his supporters seem to think we are? Did we go to college for a cushy life and lessons in subversion? Are we the useless products of a wasteful and over-permissive period of recent history?

Obviously, I'm reluctant to consign myself and thousands of others to a pigeon-hole labelled "unproductive", and I do think there were tangible and not-so tangible benefits from my education, for myself and others around me. I like to think I'm better able to understand the world around me as a result, and to play a part in changing it. It's helped me live and work with other people more creatively, and to take a reasonably informed view of politics and culture. I've no doubt that my motives in making the decisions which shaped the different phases of my education were quite genuine, and in what I then perceived to be my own best interests and those of others.

So if I wasn't a conscious idler, what was I? How come I've ended up at the top of the ladder of academic attainment without clear future prospects, and with a distinct feeling of uselessness by current standards?



It is clear to me now that my education lacked any clear direction or purpose. My first real academic decision, taken on the basis of real experience and information, was to take a year off and change course to philosophy.

The sort of education I received was totally inappropriate to life in modern Britain—liberal, humanistic, devised more to equip people to administer the empire than to live and work in a declining off-shore European island. I have no doubt that the demise of the old grammar school system has helped erode this ethos, but it lives on in most universities, which still see one of their major roles as creating a cultured elite capable of "leading society", "spreading enlightenment", and all those other vague ideals which the unchecked expansion of higher education in the 1960s left unchallenged.

The troubled climate of recession of the 1980s, with declining industry, financial instability, mass unemployment and social unrest, has exposed that ethos and thousands of its products like myself to harsh scrutiny. Rhodes Boyson and his colleagues are subjecting us to a particular form of scrutiny, and proposing particular solutions to the problem we represent. Education has to become more "productive" and "relevant", and especially geared to industrial needs and employment prospects. Boyson has even coined a special term for this shift of emphasis, "the broad steer".

I hope I have made it clear that I agree with Boyson that there are various problems which need urgent attention. The thousands of school-leavers turning their backs on education, and the millions of others who regard education as a wasteful indulgence, would presumably also agree. Where we disagree fundamentally is over the nature and cause of those problems, and the solutions needed.

The practical effect of current government policy on education is to reinforce the failure of current systems to meet the real needs of individuals and society as a whole.

There are alternatives, which were beginning to take shape in various public debates sponsored by the last Government but brought to an abrupt stop by the current government. Though resources are urgently needed in education, what is required from all sides is the political will to create the sort of open and relevant system of education which Britain needs. It should not be just more of the same, which is what expansion in the sixties meant, but a system which allows everyone to develop their full potential and play a full part in the community.

As we move towards the 1990s, the twin challenges of mass unemployment and new technology will create new demands on education and training which we can't afford not to meet, if they are not met, and the effect of government policy is simply to make millions of people feel personally useless, the future will move bleaker than anything recently witnessed.

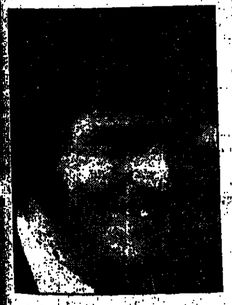
Over recent months there appears to have developed a consensus that some direction needs to be given to policy on education, and various inquiries and research projects are being sponsored by government. NUS has prepared its own view, our "Manifesto for Education", as a basis for our own contribution. In particular, we are trying to present positive answers to the sorts of questions Boyson and others are asking, without making people feel useless and without providing excuses for cost-cutting.

Andrew Pearmain

The author is vice-president education of the National Union of Students.

Science in America

Running rings round Saturn



Clive Cookson

Now that the Oohs and Ahhs which greeted Voyager 1's spectacular encounter with Saturn have faded away, and the mission scientists have had two and a half months to start digesting the data, it is fair to ask how they are getting on.

How many of the surprises that enraptured the Voyager headquarters in November have been explained? What are the mysterious "spokes" in Saturn's rings? Why is one set of three ringlets braided and intertwined, in apparent defiance of the laws of physics? Is the surface of Titan, the planet's largest moon, a bizarre swamp of liquid nitrogen as first observations suggested?

It turns out that the structure of the rings, which Voyager showed to be much more complex than anyone had predicted, is still largely unexplained. What looked like four or five broad bands from earth-based telescopes and even from the low-resolution camera on board Pioneer 11 (the first spacecraft to fly past Saturn in 1979), actually consists of hundreds of concentric ringlets, some elliptical rather than circular in shape. The scientists are now puzzling over the forces that keep all these fine details in place and prevent billions of the ring particles being smeared out into a smooth uninterrupted disk.

The old theory was that gravitational effects from the nine moons of Saturn, orbiting the planet beyond the rings, maintained the ring divisions visible from earth, through a phenomenon known as resonance. But these large satellites could not be responsible for the fine structure revealed by Voyager.

It is now clear that far more complex gravitational physics must be invoked. The favoured new idea is that the appearance of the rings is controlled by the gravity of bodies within the rings themselves.

Physicists who have studied the hitherto obscure subdiscipline known as ring dynamics believe each ringlet's particles may be herded into place by small satellites or moons orbiting nearby on either side. They quote as supporting evidence Voyager's discovery of a narrow F Ringlet just inner and outer limits are apparently controlled by two little moons (called S-13 and S-14). And the spacecraft detected another new moon which seems to "shepherd" the outer particles of the A ring. Many other chunks of ice and rock may be embedded within the main A, B and C rings—moons too small to keep the less massive particles in place but not smaller particles in place but not large enough to have been observed by Voyager.

But scientists are having to invoke forces beyond gravity to explain some of the more bizarre ring features. For example the ring consists of three separate strands, two of which have quite sharp kinks and seem to be "braided" around each other. No one has suggested a very convincing mechanism for the intertwining, though some theoreticians are playing around with a mixture of gravitational and electromagnetic effects. Measurements show that the rings contain a large population of tiny particles less than one-thousandth of a millimetre wide, and they might become electrically charged by radiation and then pushed about by Saturn's magnetic field.

The celebrated spokes — dark fingers radiating for thousands of kilometres across the thick B ring — may also be microscopic particles which have somehow become charged and then lifted above the face of the main ring by electrostatic forces. But no one really knows.

The scientists who planned the Voyager mission had looked forward to observing Titan more than any other aspect of Saturn, even the rings, because it is the only moon associated with any planet that is known to have a substantial atmosphere. Measurements from earth had indicated the presence of methane but astronomers could not tell whether Titan had an extremely attenuated atmosphere or one denser than our own.

And what of Saturn itself? Its general appearance is like its sister planet Jupiter, which Voyager visited in 1979, with alternating bands of pale and dark orange clouds. But these features do not look as vivid as Jupiter's because Saturn has a much thicker layer of haze obscuring the cloudtops. Perhaps the greatest surprise about Saturn's atmosphere is the discovery that its wind speeds exceed 1,600 kilometres per hour—four or five times faster than Jupiter's.

In August Voyager 2 will also swing past Saturn to follow up the observations of Voyager 1. It will be on a slightly different path, passing closer to some of the rings and moons and further from others, and this change of perspective may help scientists elucidate some of the mysteries that its twin craft left behind.

Don's diary

Sunday

New term tomorrow. The pile of unmarked scripts on my desk has not significantly diminished during the holiday. I realize that no amount of effort could shift them today, forget about them and give my attention to the garden.

It is hot, very hot, the kind of day when the candles, always ready for the emergency, bend to a U-shape in their holders. We all look and feel like bent candles, including the children who have long since exhausted the novelty of their Christmas presents. Obviously the pool (a 16 foot diameter washing-up bowl made of plastic) is the first priority. Yesterday I topped it up and today it has turned green. I empty a lot of chlorine into it but have no acid (pool alchemy is soon learned by expatriates here) and have to borrow. It's marginally less green but smells like concentrated bleach. I drop the children in last thing at night, they emerge beautifully clean.

Monday

Arrive at university at 7.30 am to try and discover my Semester 2 timetable. For the last few years I have been partly responsible for the timetable but this year my wife insisted I spend Christmas with the family rather than the timetable, on pain of withdrawal of conjugal rights so I handed over to a colleague. Rather chagrined to discover he has done a somewhat better job than I did. I wonder how his conjugal rights are doing.

Present myself to a predictably empty lecture room; the students take some time to settle in. At 11 am I count four heads in the library. In the afternoon, however, full classes turn up. One is a group of 11 potential nurse tutors trying diligently in two terms' lectures to reach a reasonable competence in biochemistry starting from no science at all. Where does one find a textbook suitable for such a group?

Tuesday

Teaching is hampered by the lack of roofs on several buildings. These blew off in a freak storm last week. What is worrying is that the education roof is still there and storms are common. The roofs are made of half-ton slabs of asbestos each secured by four small bolts. The bursar has been seen with a smile on his face which suggests that the £150,000 damage is an insurance matter.

It rained last night and the temperature has dropped to a tolerable level which is just as well because the air conditioning is not working. Two power cuts last week stopped the time clock and the plant. It's Sunday. Because it is cooler the 2 pm class managed to do without their usual post-prandial snooze and stayed awake until the end. The class is a group following a three-year diploma course to become science teachers. We touch on plate tectonics as a background for work on minerals and they are fascinated to learn that where they are sitting was once above the South Pole. The sun has come out and the temperature climbs rapidly up through the 30s.

Return home to plant seeds (make hay while it rains) so assist the children to dismantle the Christmas tree. It has died again of course, all bent, like the candles.

Wednesday

Work on material for next week's in-service course. All 22 schools send teachers to Gaborone for this annual event. The teachers come from all over the world and vary from the highly experienced to the polished new peace corp volunteer and it is difficult to devise material suitable for all.

The air-conditioner comes on but not quite as anticipated : it runs from 4 am to mid-day. Afternoons are hell after the rain. Retire to the pool. Take children to *Pinocchio* at the cinema. The air conditioner there has failed as well so we wilt. Most of the university staff seem to be there so we hold a meeting in the interval.

Thursday

Only one lecture today (it will have to be moved but perhaps not this week). It is a social aspects of science course and was on the motor car. It is difficult to describe convincingly the problem of atmospheric lead levels on Tokyo pavements when the largest traffic jam I have seen here was five cars long. More in-service work.

Friday

Put finishing touches to materials for the course. The co-ordinator at the ministry cannot be contacted; apparently he has taken a day's leave. It probably means that the water pump has failed at the cattle post. Cattle posts are usually a day's journey away and effecting a repair is therefore a three-day job. In this cattle-owning democracy, leave on a Friday or a Monday is commonplace.

Drop off at the Veterinary Diagnostic Laboratory on the way home to collect half a ton of rabbit droppings in the truck. There is a persuasive theory of development which says that the rich countries are rich and the poor, poor because in the latter, the bugs which make the humus in the soil work more slowly than the bugs which eat it up. This happens wherever the ambient temperature is above 20°C. Certainly, gardening here is devilishly difficult compared with England and farmers here two centuries ago just would not have had sufficient spare time to stage an agrarian revolution.

Four inches of rabbit droppings in wood shavings dug well in allows the soil to retain sufficient moisture that can stand living in four inches of rabbit droppings. The egg plants are good this year but, as always, all have ripened at once. A couple of aubergines now and then is my idea of heaven but forty is so consumed over five days make me long for turnip.

Saturday

Had hoped to do something about the rabbit droppings but felt the amount of paper to be given out to the teachers next week was still insufficient to persuade them that the organizers were taking the thing seriously. Produce a potted polymer chemistry for teachers of the new Cambridge overseas chemistry syllabus.

The children discover dozens of baby chameleons about 1.5in long in a guava tree—a brood must have just hatched. The children are delighted and put them in all sorts of different places to see what colour they will go. They can manage anything from almost white to dark brown. But they cannot manage blue; they say that if you put one in a blue washing-up bowl it has apoplexy.

Andrew Clegg

The author is senior lecturer in science education at the University College of Botswana.

Laurie Taylor

That looks like 14 to the Critical Chomskyists and nine to the Neo-Wittgenians.

Recount.

Really, Mr Odgers. There's no point. I can count up to nothing without difficulty.

Mr Chairperson ?

Yes, Dr Quintock.

I'm sorry sir, but I really am beginning to doubt the value of the whole exercise. It's becoming increasingly clear that if we're going to have a proper Rift in this department then several people will have to change sides.

I'm afraid that's out of order, Dr Quintock. There is no debate whatsoever about whether or not we have a Departmental Rift. That was a matter on which we were unanimous. In fact, as I recall, it was you yourself who first drew our attention to the wide publicity which had accrued to the Cambridge English Department after news leaked out of their own Rift between structuralists and traditionalists.

I'm not denying the value of a Rift, sir. Merely pointing out that we seem incapable of having one.

think, Dr Quintock, that persistence may be the answer. If you remember there were some signs of real division in the debate between Althusserians with Reservations and the Relatively Vulgar Marxists.

In the final vote, was 13-1 to the Althusserians. ... You could hardly leak that to the 'Daily Mail' as a significant academic division. I mean a Rift has to be something like 3-6 or even 9-5.

Yes, thank you, Dr Quintock. Most helpful. But I think we must now return to the main business. The next proposed division is, I understand, between Marshall McLuhan and the Birmingham Centre for Contemporary Cultural Studies. Can I see those in favour of Marshall McLuhan ?

Point of order, ...

Yes, Needham ?

Does the Centre for Contemporary Cultural Studies include Stuart Hall ?

What's that ?

Well you see, sir, Professor Stuart Hall only recently left the centre. And I was wondering if one voted for the centre imagining him to be still there.

Another point of information, sir, from Dr Rabitz ?

I suggest that one imagines the course with Stuart Hall then is it also permissible to think of Marshall McLuhan as still alive for the purpose of his vote ?

Certainly. Certainly. I see no problems in either case. So, its Contemporary Centre with Stuart Hall, versus Live Marshall McLuhan.

Amendment, sir. Could that read Barely Marshall McLuhan ? I find myself unable to vote for his later work.

Fine, So Contemporary Centre with Stuart Hall versus Barely Live Marshall McLuhan.

Point of order, sir.

Do you have to, Dr Quinock ?

Surely, sir, we never have extreme unions. Left versus Right. Structuralists against Traditionalists. Rifts, by definition, should not be qualified.

I'm afraid I can't agree with you, Dr Quinock. I'll allow that I found the early dispute between *Theoi Pits of Foucault; We Can Understand* and *Only on Two Articles by Basil Bernstein* a trifle over-cautious. But Rifts do not just arise. They have to be wanted at. And incidentally, Dr Quintock, may I advise you to restrain your Points of Order a little. You may remember that the other essential ingredient of the Great Cambridge Rift was the record of a relatively long-serving member of the department. You may at one time have been for The Centre for Contemporary Cultural Studies with Stuart Hall.

LETTERS TO THE EDITOR

ILEA committee on course rationalisation

Sir,—I have read with interest—and some astonishment—the series of news items which have recently appeared in *The TIMES* relating to the current ILEA committee on the rationalisation of courses within the five London polytechnics. I was the directorate representative from the Polytechnic of the South Bank on the committees concerned and am disturbed that an attempt appears to be being made to prejudice this issue before the exercise is complete and the report is formally presented to the appropriate ILEA committees.

I should therefore welcome the opportunity to leaven the debate with a few facts which I sincerely hope will inject an unemotional and constructive element into it.

(1) The committee which undertook this rationalization study was established jointly by the ILEA and the CDLP and given a clear remit to consider two areas of work within the five London polytechnics—polymer science and technology plus metallurgy and metal finishing.

(2) The working party consisted of one representative from the directorate of each of the five London polytechnics and two senior and experienced ILEA officers, one of whom—the chief inspector for further and higher education (Dr N. Hayes) was its chairman. A senior science inspector of the ILEA also attended meetings and provided valuable information and assistance.

(3) The working party met 10 times between January 1980 and the presentation of its report in September last year. It received data and written submission from the polytechnics concerned, visited the departments and held formal and in formal meetings with all members of their staff.

4. The emphasis throughout was on the immediate and long term well being of the staff, the students and the academic disciplines.

5. The final report included details and carefully considered arguments covering all its terms of reference. The only one which now appears to be being publicly disputed—or obfuscated—is the rationalization of polymers. As the courtesy of confidentiality has already been breached solely on this issue it is to this that I shall confine my further comments.

6. The decision to transfer the polymer work to the Polytechnic of the South Bank was made in two stages. First, all the staff concerned accepted that, because of the duplication of facilities, the unit costs and the need to ensure the continuing provision of polymer studies in London, there should be only one centre for polymer studies in the London polytechnics. The next decision was much more difficult but on the basis of the best academic environment in which the discipline could develop vigorously in terms of teaching and research, it was recommended that the single centre should be based at the Polytechnic of the South Bank. This decision was made before any information was available on the proposed Technopark at the polytechnic which will obviously offer even greater opportunities for the development of the discipline and its links with industry.

(7) This was not an easy decision for any of the members of the committee, having met the staff they were well aware of the uncertainties and personal problems any such rationalisation can cause. In spite of this however it is now no secret that there was an overwhelming majority in favour of the recommendation that the single centre should be housed at the Polytechnic of the South Bank.

(8) Before submitting the report to the appropriate ILEA committees the education officer and directors of the London polytechnics have asked for a costing exercise to be prepared. A joint group of specialist staff from the two departments concerned is now undertaking this exercise. So far no firm detailed decisions have been made on what equipment will be transferred, where it will be housed at the Polytechnic of the South Bank, or on maintenance and installation costs.

(9) The provision of staff space and facilities is also being considered but again it is not possible to prepare precise duas until some decisions are made on factors such as how the move will be phased and the effect of overseas student numbers —some of the specialised courses at PNL have exceptionally high overseas student numbers and the effect of the fee charges cannot presently be reliably assessed. There also appears to be a growing view among most of the staff concerned that many of the options which will obviously affect the further development of the discipline should not be foreclosed before all the staff of the new centre are in a position to be involved in making them.

(10) Until this costing report is complete it is both misleading and inaccurate to discuss the amount of money involved; certainly figures quoted in your issue of January 16 are quite unrealistic. Of course it is impossible for MacDowell to quote figures concerning the cost of getting supporting services at PoSB before a number of the related decisions have been made. My only comment it is that so far it appears almost certain that the Polytechnic of the South Bank will be able to accommodate all of the necessary equipment in existing ground floor laboratories where all the supporting services are readily available.

I have no doubt that the preservation of academic and research standards in many other disciplines in the London polytechnics require an expanding programme of course rationalization—I noted with interest in the article in your issue of January 16 that rationalization was described as "the enemy of defence of excellence". Further the existence of five polytechnics in London affords a unique opportunity in this respect, which is not available in any other part of the country.

It is essential, however, that the complex, crucial and highly sensitive decisions involved in rationalization are made as a result of a rational and demonstrably considered procedure which involves the staff primarily concerned. It is equally important, if the exercise is to have any success and stability, that it should not be conducted in the pages of the press.

Yours faithfully,
D. H. W. HYKIN,
Assistant Director,
Polytechnic of the South Bank.

Research into comprehensives

Sir,—We have read with considerable concern Professor Lacey's article 'The Comprehensive Schools Debate' (*TIMES*, January 16). We do not at this stage wish to comment on certain parts of the article which, in our opinion, amount to a personal and unjustifiable attack on our professional integrity and also seem to be gratuitously insulting. We do however wish to comment on certain allegations, criticisms, inaccuracies and omissions in his article.

First, even in Professor Lacey's glowing account of the National Children's Bureau's (NCB) study *Progress in Secondary Schools* there are major errors. For example, he asserts that benefits were gained from using the same tests for 11 and 16-year-old children in both reading and maths. Unfortunately, he is wrong. The NCB researchers did use the same test for reading (a procedure which we have suggested—and they have admitted—caused problems due to a "ceiling effect") but they used *different* tests for maths for children aged 11 and 16. We are surprised that Professor Lacey made such a crude error if he is interested in an accurate assessment of the implications of this major piece of educational research. Secondly, he claims that in the top ability group, comprehensive school pupils did as well in maths as grammar school pupils. Unfortunately he is wrong again. We quote the original NCB report to prove the point: "Of these in comprehensive schools, within this top group scored on average lower than those in grammars." (page 107).

Furthermore, in his criticisms of our publication *Real Concern*, Professor Lacey misquotes us and misrepresents our position. We are severely critical of the NCB research, but we substantiate our criticisms.

As Professor Lacey did not adequately summarise our report, we restate some of our concerns here.

a) Presumption of data. The report nowhere gives any original results concerning the outcomes of secondary schooling. All the published data have been "adjusted" for, *inter alia*, social class and attainment at 11, but no information is given to show by how much; the statistical appendix merely provides formulae which are empty of values and therefore useless. When we asked the NCB whether the unadjusted data would be made available, a spokesman said that they would not, as to publish the raw figures would be "so misleading as to be dangerous". This attitude is, in our opinion, an insult to the public. Publicly-funded researchers should be required to publish data of public interest (with appropriate explanations). This does not mean, as Professor Lacey seems to imply, that ALL the data collected need to be presented in their raw form. That is clearly absurd with a sample of many thousands. But any competent researcher ought to summarise original data in a concise and comprehensible way in a published report.

b) The tests of educational attainment. The NCB report gives no information about the validity, and reliability of the attainment tests used at 16. The omission of this basic information in a major research report is inexcusable. Yet Professor Lacey overlooks this while accusing us of "ignorance of the design and procedures followed". We take grave exception to this for we are well aware of many of the complexities and limitations of multiple regression and other forms of multivariate analysis. We suggest that the NCB researchers' use of such complex statistical techniques will not validate crude results obtained from tests of doubtful validity and unestablished reliability amounts to pseudo-sophistication.

c) The interpretation of results. The NCB report is in our view consistently partisan: no credit is given to the achievements of secondary modern and grammar schools, while findings which reflect adversely on comprehensives are explained away. For example, the NCB found that parental satisfaction was lowest for the comprehensives but the author does not appear to regard this as worrying.

Our second area of concern is what the NCB reported was happening in our secondary schools. They found that the educational results for comprehensives were worse (even after adjustment) than for pupils in the organisation of grammar and secondary modern schools. A particularly worrying feature is that the early comprehensives (pre 1966) came out worst of all on all the counts. These are some of the findings which we describe as "deeply worrying for everyone concerned with comprehensive schools". We emphasize that we are not "anti-comprehensive". We recognize that there are many good comprehensive schools; but their interests are surely not served by poor research.

Yours faithfully,
CAROLINE COX,
Chelsea College, University of London.

JOHN MARKS,
Polytechnic of North London.

Sir,—Fred Naylor and Antony Flew both accuse me of deliberately refusing to take up issues and, in particular, criticisms of the National Children's Bureau's survey that were made in the Centre for Policy Studies pamphlet "Real Concern". The implication is that I set out to mislead readers of the review by suppressing important evidence and criticism. I strongly repudiate this suggestion.

It is interesting that they stooped to exploit a part of the review in which I expressed a *regret* that I was *deflected* from examining some parts of the CPS pamphlet because the accusatory tone, the evident bias, the poor quality of the work posed a much larger problem to which I had to give space. I regretted having to do this. I would much rather the Centre for Policy Studies had produced a more technically competent and balanced critique.

Every piece of research, of the scope and importance of the NCB survey needs and deserves criticism. I would point out I made several important criticisms of the NCB study and would expect that these will be taken up by other researchers and responded to by the NCB. My conclusion that the results were reassuring was clearly contingent on satisfactory answers to my critique and of the findings of the NCB study on O level and A level results replicating Jane Steedman's findings.

When I was first asked to review the three documents covered in the article I was quite unaware of the existence and reputation of the Centre for Policy Studies. I therefore made inquiries and was sent a list of people who constitute the Education Study Group. This group includes Caroline Cox and John Marks who were responsible for commissioning the pamphlet *Real Concern*. The group also includes Fred Naylor and Antony Flew. I submit that by concealing their interest they were in fact concealing a fact of considerable importance to the readers of their letters.

Yours faithfully,
COLIN BAGLEY,
Professor of Education,
University of Sussex.

Special interests

Sir,—In your leader deploring the superficiality of newspaper coverage of issues in higher education you seem to have fallen into the same trap yourself by casting engineering academics as a "special interest" group, and this in the year in which the Finniston report charted major reforms in engineering education and training.

The engineering profession's conference was pleased to be identified as a "special interest" group since what we are fighting for is better preparation of the highly qualified technical manpower essential to the future of British industry. Our search for a closer relationship with engineering employers and a clear role in the proposed engineering council is in furtherance of this general aim, not the glorification of individual engineering academics.

I expect engineering professors together with their more practical colleagues, to continue to press for reform in our sector of higher education. Your support as well as others, will I hope meet our efforts with the seriousness they deserve.

PROFESSOR R. C. SMITH,
Chairman, Engineering Professors' Conference.

Environmental research

Sir,—In your article about Professor Willmott (*TIMES*, December 16) you point out that the Centre for Environmental Studies "will live for a few months more on its old books and pamphlets", which books and pamphlets you suggest for represent a considerable academic output by the staff of the centre, which gives the lie to the opinion that CES's research is "expensive, unproductive, lacking in clear research focus and politically suspect in the eyes of most potential users".

The demand for CES reports, papers and books continues to be buoyant and your readers would like to know that the complete series of CES publications could be obtained by writing to: Centre for Environmental Studies, Second Floor, Golden Cross House, 8 Duncannon Street, London WC2N 4JF.

Yours faithfully,
ANITA BIRD,
CHRISTINE MARCHANT,
SUSAN RUSSELL,
DAVID YORATH,
CES staff.

Cartoon image

Sir,—Though I am reasonably flattered from personal vanity, I should be made clear that the cartoon that headed my article of January 23 was not of me.

Yours faithfully,
ERNEST RUDD,
University of Essex.

TIMES PAST — THE TIMES

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Cutting the Gordian knot

The smoke signals escaping from the Department of Education and Science on the subject of a national body for the polytechnics and colleges are frankly alarming. No public announcement of the DES's plan will be made until the House of Commons' Select Committee has been informed officially about this new radical initiative, so the time for substantial or final comment has not yet arrived. But it now seems increasingly likely that the Government is planning to establish a national body which will effectively end local authority control of advanced further education and so complete the nationalisation of higher education in Britain.

If this foreboding is correct, two mistakes will already have been made. First, the Government will have lost its patience and cut through the Gordian knot of local authority involvement in higher education, rather than staying cool and trying to disentangle it. Second, it will have made policy first and consulted afterwards, as Anthony Crosland did in 1965 in his famous Woolwich speech, rather than engaging in the long, often frustrating but ultimately more promising path of dialogue proffered by a later Labour minister, Shirley Williams, in her 1978 discussion document *Higher Education into the 1990s*.

Of course, it would be wrong to condemn too harshly or presume merely a proposal the details of which are still cloaked by Parliamentary privilege—and more wrong still to accuse the DES now of precipitate action when so many, including The *TIMES*, have been espousing it of the opposite offence, breathless inactivity. But it is not wrong to discuss the general background against which any proposal to establish a national body must be judged, and such a body's potential to solve the two great problems of British higher education in the 1980s, the anti-planning of the college and polytechnic sector (and rather less urgently the non-planning of the university sector), and the faltering age participation rate.

The trouble is that the policies that ameliorate the first problem, broadly the creation of a more cohesive national system of higher education, may also be the policies that by emphasising the closed, self-sustaining, orthodox, even elitist "feel" of higher education prevent its breakout through the encircling threat of demographic decline into a brave mass future. So the choice at its simplest and starkest may be between money today and students tomorrow.

Some will deny this conclusion that a more rational and centralized system of higher education may turn out to be a duller system less able to attract the new students that universities and colleges will need if they are to thrive in the 1980s (and if this country is to get the higher education it needs and deserves). They will argue that in any case the financial crisis facing the non-university sector is now so acute that a solution cannot be put off, and that any sensible solution will require the establishment of some kind of national body.

They will further argue that there is no evidence that subjection to local authority control has made polytechnics and colleges more innovatory and more open, and that there is indeed some evidence to the contrary in the shape of petty financial restrictions, rigid bureaucratic procedures, and time-consuming and inertia-generating systems for approving new courses. Before this perspective, the creation of a national body, especially if it is coupled with a relaxation of course approvals, has the potential to liberate the progressive instincts of the public sector and the Woolwich speech, rather than engaging in the long, often frustrating but ultimately more promising path of dialogue proffered by a later Labour minister, Shirley Williams, in her 1978 discussion document *Higher Education into the 1990s*.

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Two years ago Dr Bell came to Washington to tell Congress of his enthusiastic support for President Carter's proposal to create ED. But he said at his confirmation hearing this month that when Mr Reagan interviewed him before his Cabinet nomination "I was told very forthrightly that [Mr Reagan] is on record for abolishing that department". Dr Bell told the senators, in one of the responsibilities I will have will be to look for other alternatives" to its present status. "The President intends to carry out the commitments he made during the campaign."

However, Dr Bell has indicated in interviews that he would oppose any move to push education back into a huge bureaucracy like the old Department of Health Education and Welfare (HEW). As Dr Bell himself said, he sometimes felt he was "the lowest form of animal life", trying to get his views heard as commissioner of education within HEW.

Quite rightly, he would prefer, if a change has to be made, to slim down ED and demote himself from the cabinet but keep the department's independent status. It would then be on a par with subcabinet agencies like the National Aeronautics and Space Administration.

The prospect of downgrading terrifies some educators who fear that, as an isolated agency with no voice to defend its interests at Mr Reagan's cabinet table, ED would be subject to even more savage budget cuts. But they are probably attaching too much importance to form.

The American experience shows that cabinet status is less than little to protect an agency if the national mood turns against it and political priorities lie elsewhere.

ED does deserve to keep its present rank, if only to symbolize that the federal government does have several legitimate roles in education, such as providing access to higher education for students who could not otherwise afford it. But if the Reagan administration insists on demoting the department, colleges and university lobbyists should not invest too much political capital in fighting to keep it in the cabinet. They must save their strength for the more important battles that lie ahead, to save the federal higher education programmes from the Republican axe.

The Bell tolls for ED

No wonder American academic leaders sighed with relief when Ronald Reagan chose Terrel Bell as his education secretary. Instead of the right-wing fanatic from inside the education community whom some had feared the new president would appoint, they have a mildly conservative pragmatist who has spent his entire professional life in teaching and educational administration, at both school and college levels.

Ted Bell, as he is known, got good marks for his administrative performance in the short-lived days of U.S. commissioner of education from 1974-76, and for the job he has done since then as state commissioner of higher education in Utah. He has apparently coped effectively with unexpected cuts in Utah's college and university budget, and was probably understands the problems and preoccupations of American higher education as well as anyone in the country.

Already the new secretary seems to have modified his views about the important aspect of the Education Department (ED)—whether it should exist as an independent cabinet-level department

The illusory rhetoric of human rights

Steven Lukes

Now that the Reagan presidency is upon us, there are many reasons for gloom and foreboding. But I can think of at most for relief, if not rejoicing: the end of Carter's politics of human rights.

I am not just thinking of the selectiveness of that style of politics; crusading against the Soviet Union while supporting the Shah and Somoza, denouncing genocide in Cambodia and then supporting the seating of Pol Pot at the United Nations, purporting to defend human rights in South America and in the last days of the administration, resuming military aid to El Salvador (on the pretext of a non-existent Nicaraguan invasion). Nor do I have in mind merely the ideological functions of such politics, appealing to Western, especially United States, politicians and publics, by employing universalistic language to state a highly partisan case, implying that the West has a monopoly of virtue, as against the Soviet and Third Worlds, and a special vocation to protect and promote universal moral values, in the shape of "basic human rights", among the moral infidels, or at least rail against their frequent violation.

There is, however, a more fundamental reason for suspecting that the rhetoric of "human rights" is not merely illusory but dangerously so, in the context of international politics. And that is that the very notion of "human rights" is not one that can genuinely be universally subscribed to, given the belief-systems which currently divide the world. If that is so, then all the solemn international conventions and domestic constitutions that proclaim such rights have to be seen for what they are: texts capable of radically divergent interpretations. That goes for the 1948 Universal Declaration of Human Rights (against which the Soviet Union and Saudi Arabia voted), the 1966 Covenant on Civil and Political Rights, the Helsinki Final Act and the documents currently being discussed at Madrid, as well as the new Soviet Constitution, whose predecessors of "basic rights and freedoms" are even more impressive than those of Stalin's in 1936.

I do not simply mean that different political ideologies interpret "rights" differently—as indeed they do. In essence, the West accords primary importance to individual rights and primacy to civil and political over economic and social rights, whereas in the Communist world that priority is reversed, and in the Third World group rights, whether of nations or communities, are primary. The point is rather that the very notion of "human rights" only makes sense on the basis of certain assumptions, and those assumptions are not universally shared. I shall not write here about Third World nationalism, or Islamic fundamentalism, or Hindu communalism, but focus, since it is the most relevant to the argument, on Marxism.

Can a marxist believe in human rights? (by marxist I here mean orthodox or official marxism). There are two reasons for doubting that he can, the first more and the second less obvious.

Human rights, or "natural" rights, are rights attributed to all humans, on account of their common "human nature". But, ever since Marx's *Theses on Feuerbach*, followers of Marx have known that all such talk is mystifying, that human nature is progressively transformed in the course of history, and constituted by social relations, themselves rooted in material relations or production. Abstract, universalistic, and above all *moralistic* talk of "human nature", and conclusions derived from such talk, are inherently suspect. At most, one can speak of the progressive unfolding of the conditions for human liberation under full communism, but these include the development of the new socialist man, whose nature will be relative to and determined by the wholly transformed social conditions then prevailing.

The less obvious reason, however, is the more fundamental. Marxism is not only inhospitable to *human rights*: but, at root, to the very idea of human *rights*. For rights are entitlements which those who have them may claim (against others or against the State) on the basis of rules of justice, whether these be legal or moral. In some systems, so-called "human rights" are legally enshrined, if not always enforced, but they are always based on moral rules of a universal character, which specify what is just. But this complex of ideas runs directly against the grain of the entire marxist tradition, which from Marx onwards has expressed continuing disdain for moral vocabulary and in particular for all talk of "justice" and "rights".

Marx saw these as "ideas which in a certain period had some meaning, but have now become obsolete verbal rubbish", Engels as attempts to impose on us "a moral dogma ... as an eternal, ultimate and for ever immutable ethical law on the pretext that the moral world, too, has its permanent principles which stand above history and the differences between nations": justice for him, as for Marx, was "but the ideologized, glorified expression of the existing economic relations". And Lenin stressed that in Marxism, there is "not a grain of ethics. From beginning to end", "We do not believe in any eternal morality and we expose the falseness of all the fables about morality." (On the other hand, virtually all marxist writings are full of compassion and moral outrage, and the burning desire for a better world, and most marxists, at any rate in non-Communist societies, become marxists primarily for moral reasons. A paradox worth exploring.)

These attitudes can be explained by a distinctive feature of Marxism, which distinguishes it from all other social and political doctrines. According to Marxism, legal and moral rules, specifying what is just, which give people rights, are called forth by the existence of conflicting interests, arising from class divisions, conditions of material scarcity. Such rules permit adjudication between such interests, with more or less "impartiality" but true liberation can only consist in the abolition of the very conditions which call them forth: class conflict and scarcity. In the unified society of abundance, which is full communism, there will be no need for such rules and rights, and morality and justice will wither away, along with the State, and (to quote Marx) "the narrow horizon of bourgeois right will be crossed in its entirety".

Of course, it may be objected that Marx was no marxist, and further that the official marxism of present-day "actually existing" socialist societies is only one interpretation of the original canon and a perverted one at that. It could also be objected that in any case no one takes marxism seriously in socialist countries, least of all those in power. In response, I would reply that the ideas I have been seeking to identify *do* unite present-day official marxism with the founding fathers. That influence amounts to a built-in resistance *in theory* to the notion of universally applicable, morally based human rights. In "liberal" societies, such rights may not be implemented, as in marxist societies. But in the latter they have no basis in theory, where the conditions calling them forth are on the way to be abolished, or on the way to being so.

The dangerous illusion embodied in the politics of human rights is, then, that it fosters the belief that common words signify potentially common ideas and ultimately common practices. In 1977 President Carter said that "the basic thrust of human affairs points towards a more universal demand for basic human rights". But, apart from Poland, where, precariously, non-marxist ideas inspire organized working-class power, such demands in communist societies have little chance of evoking any official response.